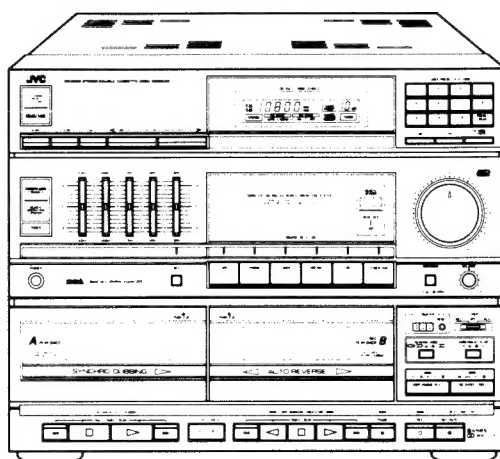


# JVC

## SERVICE MANUAL

### STEREO DOUBLE CASSETTE DECK RECEIVER

**DR-E500BK**  
MODEL No. **DR-E500LBK**



## Contents

	Page		Page
Safety Precautions .....	1-2	Servicing the Audio P.C.Board .....	1-40
Operational Explanation .....	1-3	Troubleshooting (1) .....	1-43
Block Diagrams .....	1-27	Troubleshooting (2) .....	1-44
Technical Explanations .....	1-30	Internal Block Diagrams of Major ICs ..	1-46
Removal Procedures .....	1-34	Parts List .....	Separate volume insertion
Tuner Alignment Procedures .....	1-36	Schematic Diagrams .....	Insertion
Cassette Deck Adjustment Procedures ...	1-37	Connection Diagram .....	1-51

## Safety Precautions

1. The design of this product contains special hardware and may circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (  $\triangle$  ) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

5. Leakage current check (Electrical shock hazard testing)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

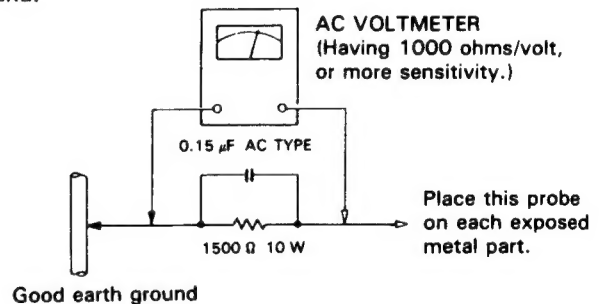
Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5 mA AC (r.m.s.).
- Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500  $\Omega$  10 W resistor paralleled by a 0.15  $\mu$ F AC-type capacitor between an exposed metal part and a known good earth ground.

Measure the AC voltage across the resistor with the AC voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



## Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

# Operational Explanation

## CONNECTION DIAGRAM

## ANSCHLUSS- DIAGRAMM

## DIAGRAMME DES RACCORDEMENTS

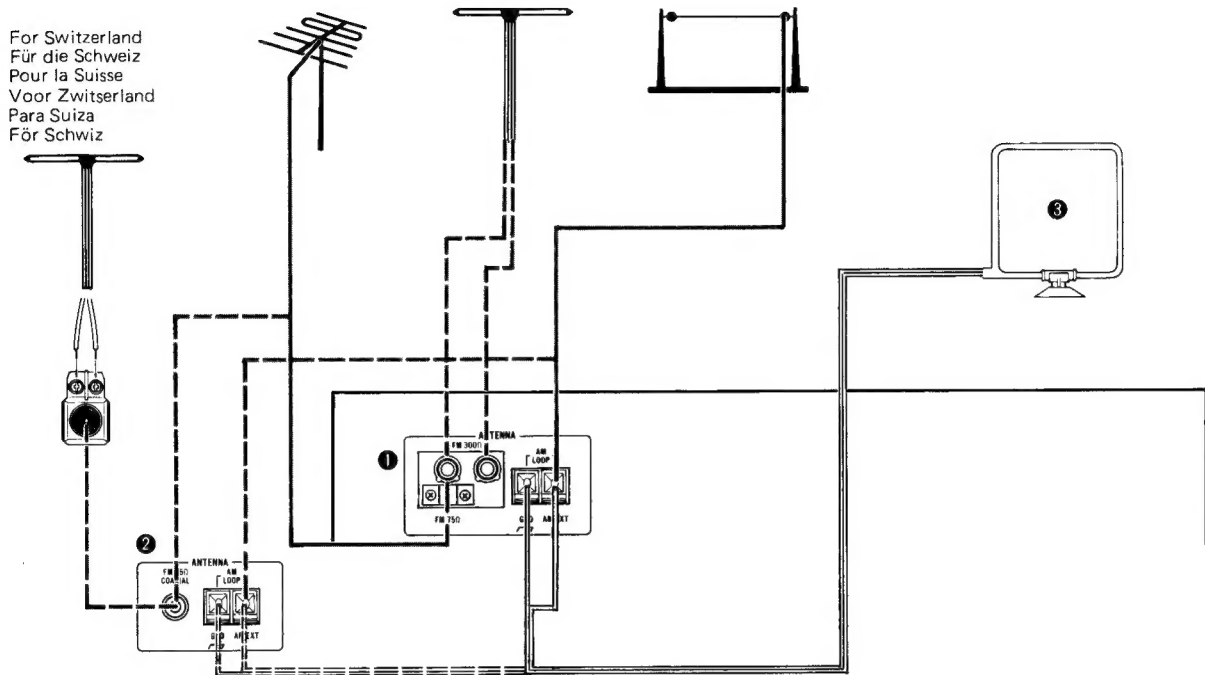


Fig. 1  
Abb. 1  
Afb. 1

- 1 External ANTENNA terminals
- 2 External ANTENNA terminals (for W. Germany and Switzerland)
- 3 AM loop antenna
- 4 BEAT CUT knob  
Normally set to "1".  
When beats occur when recording AM broadcasts, set this knob to the position where beats are least noticeable.
- 5 GND terminal
- 6 PHONO terminals
- 7 VIDEO/AUX terminals
- 8 CD terminals
- 9 VCR/DAT terminals  
Connect a VCR or DAT deck, etc. to these terminals to record TAPE, PHONO, TUNER, CD or the source connected to VIDEO/AUX terminals. In this case, connect the SOUND OUT terminals of VCR or DAT deck to the VCR/DAT terminals of this unit.
- 10 DC OUTPUT terminal  
Connect the turntable.
- 11 SURROUND SPEAKER terminals

- 1 Anschlüsse für externe Antenne (ANTENNA)
- 2 Anschlüsse für externe Antenne (für Bundesrepublik Deutschland und die Schweiz)
- 3 MW/LW-Rahmenantenne
- 4 Interferenzen-Schalter (BEAT CUT)  
Normalerweise auf "1" stellen.  
Wenn bei der Aufnahme von MW/LW-Sendungen Interferenzen auftreten, diesen Schalter so einstellen, daß die Interferenzen am wenigsten wahrnehmbar sind.
- 5 Erdungsanschluß (GND)
- 6 Plattenspieler-Buchsen (PHONO)
- 7 VIDEO/AUX-Buchsen
- 8 CD-Buchsen
- 9 Videorecorder/DAT-Buchsen (VCR/DAT)  
Hier einen Videorecorder oder einen DAT-Recorder etc. anschließen, um von TAPE-, PHONO-, TUNER-, CD- oder der an den VIDEO/AUX-Buchsen angeschlossenen Signalkette aufzunehmen. In diesem Fall den Audio-Ausgang von DAT-Racorder/Videorecorder mit diesen VCR/DAT-Buchsen verbinden.
- 10 DC OUTPUT-Buchse  
Mit dem Plattenspieler verbinden.
- 11 SURROUND SPEAKER-Buchsen

- 1 Bornes d'antenne externe (ANTENNA)
- 2 Bornes d'antenne externe (ANTENNA) (Pour l'Allemagne de l'Ouest et la Suisse)
- 3 Antenne AM à boucle
- 4 Commutateur coupe-battelements (BEAT CUT)  
Le placer normalement sur "1"  
Si des battements se produisent lors d'enregistrements d'émissions AM, placer ce commutateur sur la position où les battements sont moindres.
- 5 Borne de mise à la terre (GND)
- 6 Bornes de platine tourne-disque (PHONO)
- 7 Bornes VIDEO/AUX
- 8 Bornes de lecteur de disque audionumérique (CD)
- 9 Bornes magnétoscope/DAT (VCR/DAT)  
Raccorder un magnétoscope ou une platine DAT, etc. à ces bornes pour enregistrer TAPE, PHONO, TUNER, CD, ou le son raccordé aux bornes VIDEO/AUX. Dans ce cas, raccorder les bornes SOUND OUT du magnétoscope ou de la platine DAT aux bornes VCR/DAT de cet appareil.
- 10 Borne DC OUTPUT  
Raccorder le tourne-disque.
- 11 Bornes de haut-parleur surround (SURROUND SPEAKER)

## AANSLUITINGS- SCHEMA

## DIAGRAMA DE CONEXIONES

## ANSLUTNINGAR

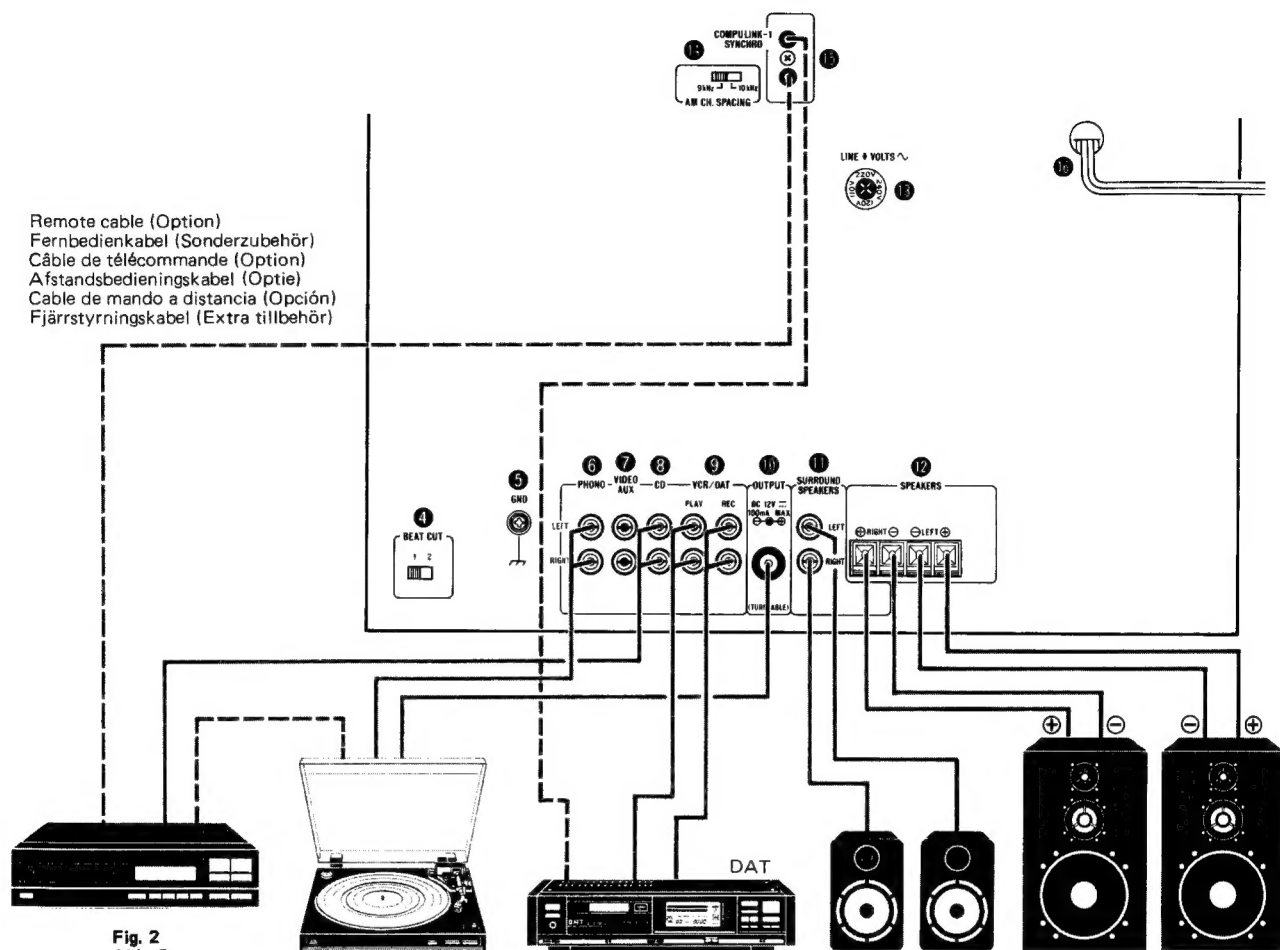


Fig. 2  
Abb. 2  
Afb. 2

- 1 Buitenantenne-aansluitingen (ANTENNA)
- 2 Externe ANTENNE aansluitingen (voor West-Duitsland en Zwitserland)
- 3 AM-raamantenne
- 4 BEAT CUT-schakelaar  
Zet deze schakelaar gewoonlijk op "1". Stel deze schakelaar in een andere stand, wanneer tijdens ontvangst van AM-uitzendingen dreunende geluiden optreden, zodat dergelijke geluiden tot een minimum worden teruggebracht.
- 5 Aard aansluiting (GND)
- 6 Draaitafelaansluitingen (PHONO)
- 7 VIDEO/AUX aansluitingen
- 8 CD-aansluitingen (CD)
- 9 Videocassetterecorder/DAT aansluitingen (VCR/DAT)  
Sluit een videocassette-deck of DAT deck, enz. aan op deze aansluitingen om op te nemen van bronnen aangesloten op de TAPE, PHONO, CD of VIDEO/AUX aansluitingen. Sluit in dit geval de SOUND OUT aansluitingen van het videocassette-deck of DAT deck aan op de VCR/DAT aansluitingen van dit toestel.
- 10 DC OUTPUT-aansluit  
Sluit de draaitafel aan.
- 11 SURROUND SPEAKER aansluitingen

- 1 Terminales de antena externa (ANTENNA)
- 2 Terminales de antena externa (ANTENNA) (para Alemania Federal y Suiza)
- 3 Antena de cuadro AM
- 4 Botón de corte de batidos  
Normalmente, déjelo en "1".  
Si se producen batidos durante la grabación de radiodifusiones en AM, utilice la posición donde los mismos sean menos perceptibles.
- 5 Terminal de puesta a tierra (GND)
- 6 Terminales fonográficos (PHONO)
- 7 Terminales VIDEO/AUX
- 8 Terminales de audiodiscos digitales (CD)
- 9 Terminales VCR/DAT  
Conecte un grabador de videocassette o magnetófono DAT, etc. a estos terminales para grabar una cinta, un disco, una radio-difusión, un disco compacto o el sonido conectado a los terminales VIDEO/AUX. En este caso, conecte los terminales SOUND OUT del grabador de videocassette o magnetófono DAT a los terminales VCR/DAT de esta unidad.
- 10 Terminal DC OUTPUT  
Conecte el todadiscos.
- 11 Terminales SURROUND SPEAKER

- 1 Yttre antennanslutningar
- 2 Uttag för yttre antenn (ANTENNA) (för Västtyskland och Schweiz)
- 3 AM ramantenn
- 4 Interferensomkopplare BEAT CUT  
Skall normalt vara ställd i läge "1". Om störningar vid inspelning av MV/LV sändningar uppträder skall denna omkopplare ställas i det läge där störningarna hörs minst.
- 5 GND-anlutningen
- 6 PHONO anlutningar
- 7 VIDEO/AUX-anlutningar
- 8 CD anlutningar
- 9 VCR/DAT-anlutningar  
En videobandspelare eller DAT-bandspelare etc. kan kopplas till dessa anlutningar för inspelning av ljudkällor som band (TAPE), grammofonskiva (PHONO), CD-skiva (CD) eller annan källa ansluten till VIDEO/AUX-anlutningarna. Koppla i detta fall SOUND OUT-anlutningarna på videobandspelaren eller DAT-bandspelaren till VCR/DAT-anlutningarna.
- 10 Likströmsuttag (DC OUTPUT)  
För anslutning av skivspelare.
- 11 SURROUND SPEAKER högtalaranslutningar



12 SPEAKERS terminals

13 Voltage selector\*

When this equipment is used in an area where the supply voltage is different from the preset voltage, reset the voltage selector to the correct position.

14 AM channel spacing knob\*

15 SYNCHRO terminal

16 Power cord

\* Not provided for the U.K., Australia and Continental Europe.

Notes:

1. Connect the speaker cords correctly; L to L and R to R.
2. Switch the power off when connecting any component.
3. Connect plugs or wires firmly. Poor contact may result in hum.
4. Be sure to set this unit on top of the CD player when stacking them.

12 Lautsprecherklemmen (SPEAKERS)

13 Spannungswähler\*

Wenn die voreingestellte Netzspannung an diesem Gerät nicht mit der tatsächlich vorhandenen übereinstimmt, den Spannungswähler auf den erforderlichen Wert einstellen.

14 AM-Kanalabstandsschalter\*

15 SYNCHRO-Anschlüsse

16 Netzkabel

\* Nicht vorhanden an Geräten für die Großbritannien, Australien und Kontinental-Europa.

Hinweise:

1. Die Lautsprecherkabel richtig anschließen, L an L und R an R.
2. Vor dem Anschließen von anderen Geräten die Spannungsversorgung ausschalten.
3. Die Stecker und Kabel fest anschließen. Wackelkontakte führen zu Störgeräuschen.
4. Bei Aufstellung übereinander unbedingt dieses Gerät auf dem CD-Player platzieren.

12 Bornes de haut-parleurs (SPEAKERS)

13 Sélecteur de tension\*

Quand cet appareil est utilisé dans une région où la tension secteur est différente de celle qui est préréglée, replacer le sélecteur de tension sur la position correcte.

14 Bouton d'espacement des canaux AM\*

15 Borne SYNCHRO

16 Cordon d'alimentation

\* Non prévu sur les appareils destinés au Royaume-Uni, à l'Australie et à l'Europe Continentale.

Remarques:

1. Raccorder les câbles de haut-parleurs correctement, L sur L et R sur R.
2. Couper l'alimentation lors du raccordement d'un appareil quelconque.
3. Raccorder fermement les prises et câbles. Un mauvais contact peut produire des hurlements.
4. S'assurer de bien placer cet appareil au-dessus du lecteur de disque audionumérique en les empilant.

## ANTENNAS

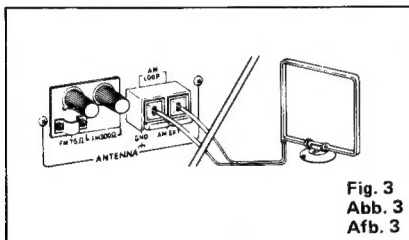


Fig. 3  
Abb. 3  
Afb. 3

### AM (MW/LW) loop antenna (Fig. 3)

This antenna is for the reception of local AM broadcasts.

#### When too much noise occurs (Fig. 4)

Change the direction of the loop antenna or reinstall it.

#### How to fix an AM loop antenna (Fig. 5)

#### AM (MW/LW) external antenna (Fig. 6)

If AM reception is not good, connect an external AM antenna (single-wire antenna) to the AM terminal.

Notes:

- If the provided loop antenna is not installed or the antenna cord touches the rear panel, it will be impossible to receive AM broadcasts.
- When installing an AM external antenna, leave the AM loop antenna connected.
- When using an AM external antenna, always connect a ground wire to the GND terminal for reduced noise.

## ANTENNEN

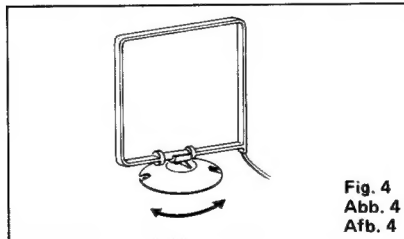


Fig. 4  
Abb. 4  
Afb. 4

### AM (MW/LW) Rahmenantenne (Abb. 3)

Diese Antenne dient zum Empfang örtlicher AM-Sendungen.

#### Bei starken Störungen (Abb. 4)

Die Ausrichtung der Rahmenantenne ändern und wieder einsetzen.

#### Anbringen einer AM-Rahmenantenne (Abb. 5)

#### Externe AM-Antenne (MW/LW) (Abb. 6)

Wenn der AM-Empfang nicht gut ist, eine externe AM-Antenne (Eindrahtantenne) an die AM Klemme anschließen.

Hinweise:

- Wenn die beigelegte Rahmenantenne nicht angeschlossen ist, oder wenn das Antennenkabel die Rückwand berührt, können keinerlei AM-Sendungen empfangen werden.
- Bei Anschluß einer AM-Außenantenne die AM-Rahmenantenne angeschlossen lassen.
- Bei der Installation einer externen AM-Antenne ist zur Störungsunterdrückung immer ein Massekabel an die GND-Klemme anzuschließen.

## ANTENNES

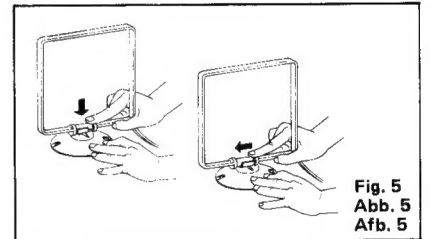


Fig. 5  
Abb. 5  
Afb. 5

### Antenne AM (PO/GO) à boucle (Fig. 3)

Elle est destinée à la réception d'émissions AM locales.

#### S'il y a trop de parasites (Fig. 4)

Changer la direction de l'antenne à boucle et remonter-la.

#### Montage d'une antenne à boucle pour AM (modulation en amplitude) (Fig. 5)

#### Antenna AM (PO/GO) externe (Fig. 6)

Lorsque la réception AM est mauvaise, raccorder une antenne AM externe (antenne à câble unique) à la borne AM.

Remarques:

- Si l'antenne fournie n'est pas installée ou que le câble d'antenne touche le panneau arrière, il est impossible de recevoir les émissions AM.
- Lors de l'installation d'une antenne AM externe, laisser l'antenne AM à boucle montée.
- Lors de l'utilisation d'une antenne AM externe, toujours raccorder un fil de prise de terre à la borne GND, afin de réduire encore les parasites.

- 12 Luidsprekeraansluitingen (SPEAKERS)  
13 Spanningskeuzeschakelaar\*  
Zet de spanningskeuzeschakelaar in de juiste stand, wanneer deze apparatuur gebruikt wordt in een gebied, waar de voedingsspanning verschilt van de vooringestelde spanning.  
14 AM-kanaalafstandschrakelaar\*  
15 SYNCHRO-aansluiting  
16 Netsnoer  
\* Toestellen voor de Engeland, Australië en het Europese vasteland zijn niet met deze voorziening uitgerust.

**Opmerkingen:**

1. Zorg ervoor, dat de luidsprekersnoeren juist worden aangesloten; L op L en R op R.
2. Schakel de netspanning van alle componenten uit alvorens de aansluitingen tot stand te brengen.
3. Sluit de snoeren en stekkers stevig aan. Slecht contact kan in brom resulteren.
4. Zorg ervoor bij het boven op elkaar plaatsen van de componenten dit toestel bovenop de compact diskspeler te plaatsen.

- 12 Terminales de altavoces (SPEAKERS)  
13 Selector de voltaje\*  
Cuando use este equipo en un area donde el suministro de voltaje es distinto del voltaje preajustado, vuelva a ajustar el selector de voltaje en la posición correcta.  
14 Perilla de espaciamento de canales AM\*  
15 Terminal SYNCHRO  
16 Cordón de alimentación  
\* No se provee en los equipos para, Reino Unido, Australia y Europa Continental.

**Notas:**

1. Conecte los cordones de los altavoces correctamente; L a L (izquierdo a izquierdo) y R a R (derecho a derecho).
2. Apague el equipo cuando conecte cualquier componente.
3. Conecte las clavijas y cables firmemente. Un contacto deficiente puede provocar zumbidos.
4. Asegúrese de fijar esta unidad sobre el tocadiscos compacto en el caso de apilarlos.

- 12 Högtalaranslutningar SPEAKERS  
13 (Ej för Skandinavien)  
14 (Ej för Skandinavien)  
15 SYNCHRO anslutningar  
16 Nätsladd

**Anm.**

1. Anslut högtalarsladdarna korrekt; L till L och R till R.
2. Koppla från spänningen när en komponent skall anslutas.
3. Anslut kontakter och ledningar ordentligt. Dålig kontakt kan resultera i störningar.
4. Placera DR-E500 ovanpå CD-spelaren om de skall staplas på varandra.

## ANTENNES

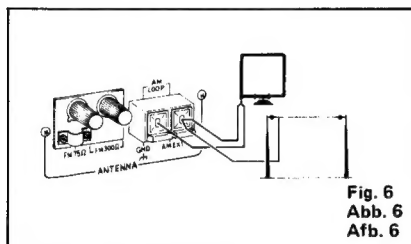


Fig. 6  
Abb. 6  
Afb. 6

**AM (MW/LW)-raamantenne (Afb. 3)**

Deze antenne is bedbeld voor ontvangst van lokale AM-uitzendingen.

**Als teveel ruis optreedt (Afb. 4)**

Verander de stand van de raamantenne en installeer opnieuw.

**Montage van een AM-raamantenne (Afb. 5)**

**Losse AM (MW/LW)-antenne (Afb. 6)**

Sluit een losse AM-antenne (enkelvoudige draadantenne) op de AM aansluiting aan als de AM-ontvangst niet goed is.

**Opmerkingen:**

- Indien de bijgeleverde raamantenne niet gemonteerd wordt of de antennekabel in aanraking komt met het achterpaneel, zal het onmogelijk zijn AM-uitzendingen te ontvangen.
- Laat de AM-raamantenne aangesloten bij aansluiting van een losse AM-antenne.
- Verbind altijd een massakabel op de GND-aansluiting aan, als een losse AM-antenne gebruikt wordt (vermindert ruis).

## ANTENAS

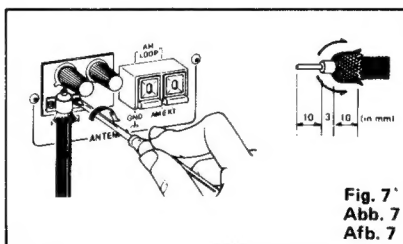


Fig. 7  
Abb. 7  
Afb. 7

**Antena de cuadro de AM (OM/OL) (Fig. 3)**

Esta antena sirve para la recepción de las radio-difusiones locales de AM.

**Si existe mucho ruido (Fig. 4)**

Cambie la dirección de la antena de cuadro e instálala de nuevo.

**Montaje de una antena de cuadro para AM (Fig. 5)**

**Antena de AM exterior (OM/OL) (Fig. 6)**

Si la recepción de AM no es buena, conecte la unidad a una antena de AM exterior (antena de un solo hilo) a través de la terminal de "AM".

**Notas:**

- Si la antena de cuadro provista no está instalada o el cable de la antena toca el panel trasero, será imposible recibir radiodifusiones de AM.
- Al instalar una antena AM externa, deje conectada la antena de cuadro.
- Cuando instale una antena de AM exterior, conecte siempre un cable a tierra en el terminal GND para reducir el ruido.

## ANTENNER

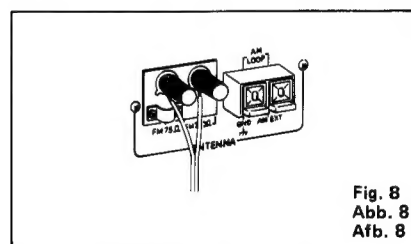


Fig. 8  
Abb. 8  
Afb. 8

**MV/LV ramantenn (Fig. 3)**

Används vid mottagning av lokala MV/LV-sändningar.

**När kraftiga störningar uppträder (Fig. 4)**

Ändra ramantennens riktning eller to bort den och montera den åter igen i ett läge som ger bättre mottagning.

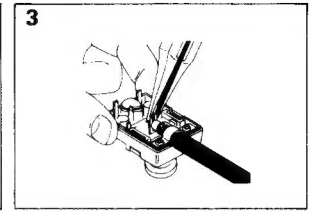
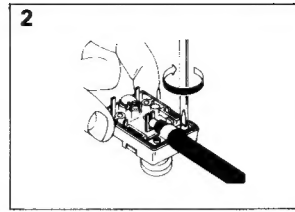
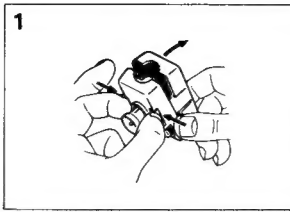
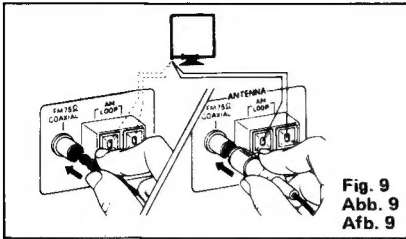
**Montering av MV/LV ramantenn (Fig. 5)**

**MV/LV yttre antenn (Fig. 6)**

Om MV/LV mottagning inte är tillfredsställande skall en yttre MV/LV-antenn (s.k. enkel trådanter) anslutas till AM ANTENNA-anslutningen.

**Anm.**

- Om den medleverade ramantenn inte är ansluten eller om antennsladden kommer i kontakt med baksidan av DR-E500 kan MV/LV-sändningar inte mottas.
- Vid installationen av MV/LV yttre antenn skall MV/LV ramantenn vara ansluten.
- När MV/LV yttre antenn används skall alltid jordledningen anslutas till GND anslutningen varvid störningarna blir mindre.



#### FM antennas (Fig. 7 & 8: Except for W. Germany and Switzerland)

- 75-ohm antenna with coaxial lead (Fig. 7)  
Loosen the screws on the bracket and insert the cable into the ring from below. Then connect the stripped core to the upper screw terminal. The bracket ring works as the ground terminal.
- Feeder antenna (supplied with this unit) (Fig. 8)  
Connect to the 300-ohm terminal.  
Take care that the wires of the feeder antenna do not touch any other terminal.
- For best FM reception using the feeder antenna provided, place the antenna in a location where reception is strongest. Make sure the antenna is fully extended in the form of a "T".

#### For W. Germany

Using the IEC-type antenna terminal (Fig. 9)  
The IEC-type antenna terminal of this model can be used for reception of FM broadcasts. Connect this terminal to the terminal labelled RADIO of the house antenna. The appropriate connecting cable is DIN 45 332. For more details, consult your dealer.

#### FM wire antenna (Fig. 9: for W. Germany)

The FM wire antenna provided can be connected to the 75-ohm coaxial jack temporarily.

#### How to connect the FM connector (for Switzerland)

In case of a 75-ohm antenna (Fig. 11)

1. Remove the case by pressing both sides.
2. Fix the coaxial lead.
3. Tighten the stripped core.
4. Remove the ring and fix it to the rear of the case to avoid losing it.
5. Install the case.

#### In case of a 300-ohm antenna (Fig. 10)

Attach the feeder antenna to the FM connector as shown in the figure.

Connect the FM connector to the FM 75 ohm COAXIAL terminal (Fig. 12)

#### TIPS FOR BETTER FM RECEPTION

Try to find the most suitable antenna for the best possible performance of your tuner.

- An outdoor antenna which has more elements has a higher gain and a sharper directivity.
- Find the direction in which multi-path interference is at its least: set the 16 kHz S.E.A. knob at the maximum and the 63 Hz and 250 Hz knobs at the minimum, then listen to a broadcast at a relatively high volume level, and set the antenna so that distortion and unwanted noise are minimized.

#### FM-Antennen

(Abb. 7 & 8: Außer Bundesrepublik Deutschland und der Schweiz)

- 75-Ohm-Antenne mit Koaxialleitung (Abb. 7)  
Die Schrauben aus dem Bügel lösen und das Kabel von unten her in den Ring einführen. Den freigelegten Kern dann an die obere Schraubenklemme anschließen. Der Bügelring dient als Masseklemme.
- Antennenzuleitung (mitgeliefert) (Abb. 8)  
An die 300-Ohm-Klemme anschließen.  
Darauf achten, daß die Drähte der Antennenzuleitung keine andere Klemme berühren.
- Für besten FM-Empfang mit der mitgelieferten Antennenzuleitung man die Antenne dort aufstellen, wo der Empfang am klarsten ist. Vergewissern Sie sich, daß die Antenne vollständig in "T"-Form ausgezogen ist.

#### Für Bundesrepublik Deutschland

Verwendung der Antennenbuchse für IEC System (Abb. 9).

Die IEC-Antennenbuchse an diesem Modell kann für den Empfang von FM-Sendern verwendet werden. Verbinden Sie diese Buchse mit der Buchse RADIO der Hausantenne. Das dafür geeignete Verbindungskabel hat die DIN-Bezeichnung 45 332. Weitere Einzelheiten erfahren Sie bei Ihrem Fachhändler.

#### UKW-Dipol (Abb. 9, für Bundesrepublik Deutschland)

Die mitgelieferte FM-Drahtantenne kann provisorisch an die 75-Ohm-Koaxialbuchse angeschlossen werden.

#### Anbringung am FM-Anschluß (für die Schweiz)

75-Ohm-Antenne (Abb. 11)

1. Die Abdeckung durch Andrücken an beiden Seiten abnehmen.
2. Das Koaxialkabel anbringen.
3. Das abisolierte Kabel festziehen.
4. Den Ring abnehmen und an der Rückseite der Abdeckung anbringen, damit er nicht verloren geht.
5. Die Abdeckung anbringen.

#### 300-Ohm-Antenne (Abb. 10)

Die Speiseantenne am FM-Anschluß wie in der Abbildung gezeigt anbringen.

Den FM-Stecker am 75-Ohm-FM COAXIAL-Anschluß anbringen. (Abb. 12)

#### TIPS FÜR BESSEREN FM-EMPfang

Versuchen Sie, für beste Tuner-Leistungen die dafür bestgeeignete Antenne zu finden.

- Eine Außenantenne mit mehr Elementen weist größeren Gewinn auf und genaueres Richtvermögen.
- Die Ausrichtung wählen, bei der die Mehrweginterferenzen am geringsten sind. Den 16 kHz S.E.A.-Knopf auf Maximum, den 63 Hz- und 250 Hz-Knopf auf Minimum stellen. Dann den Sender bei relativ hoher Lautstärke abhören. Die Antenne so einstellen, daß Verzerrungen und Störeinstreuungen minimiert sind.

#### Antennes FM

(Fig. 7 & 8: sauf pour l'Allemagne de l'Ouest et la Suisse)

- Antenne de 75 ohms avec un câble coaxial (Fig. 7)  
Desserrer les vis du collier et insérer le câble dans la bague, par en dessous. Raccorder en suite le fil dénudé à la borne supérieure. La bague du collier fait office de borne de mise à la terre.
- Antenne à câble plat (fournie avec l'appareil) (Fig. 8)  
La raccorder à la borne 300 ohms.  
Veiller à ce que les fils de l'antenne ne touchent aucune autre borne.
- Pour une réception optimale de la FM avec une antenne à câble plat, l'installer dans un endroit propice à la réception. S'assurer que l'antenne est bien étalée en forme de "T".

#### Pour l'Allemagne de l'Ouest

Utilisation de la borne d'antenne IEC (Fig. 9)

La borne antenne IEC de ces modèles peut être utilisée pour la réception des stations FM. La raccorder à la borne RADIO de l'antenne privée. Le câble de raccordement approprié est le DIN 45 332. Pour plus d'informations, consulter le revendeur JVC.

#### Antenne fil FM (Fig. 9 pour l'Allemagne de l'Ouest)

L'antenne à câble FM qui est fournie peut être raccordée temporairement à la prise coaxiale de 75 ohms.

#### Raccordement du connecteur FM (Pour la Suisse)

Dans le cas d'une antenne de 75 ohms (Fig. 11).

1. Retirer le boîtier en appuyant sur les deux côtés.
2. Fixer le câble coaxial.
3. Serrer le câble dénudé.
4. Retirer la bague et la fixer à l'arrière du boîtier pour éviter de la perdre.
5. Replacer le boîtier.

#### Dans le cas d'un antenne de 300 ohms (Fig. 10)

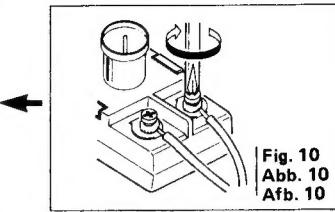
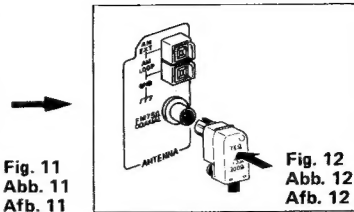
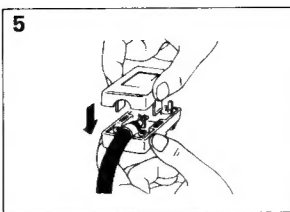
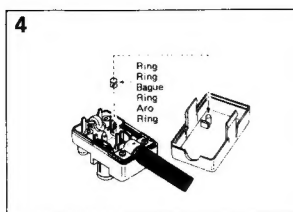
Fixer le feeder d'antenne au connecteur FM comme montré sur la figure.

Raccorder le connecteur FM à la borne FM 75 ohms COAXIAL. (Fig. 12)

#### POUR AMELIORER LA RECEPTION FM

Essayer de trouver l'antenne qui convient le mieux à votre syntoniseur et qui maximisera ses qualités.

- Une antenne externe avec plusieurs éléments a un gain plus élevé et une meilleure directivité.
- Trouver la direction dans laquelle les interférences sous plusieurs angles sont à leur minimum: régler le bouton 16 kHz S.E.A. au maximum et les boutons 63 Hz et 250 Hz à leur minimum, puis écouter une émission à un niveau relativement élevé, et régler l'antenne pour que la distorsion et les bruits non désirés soient minimisés.



#### FM-antennes

(Afb. 7 & 8. Behalve voor V-Duitsland en Zwitserland)

- 75 Ohm antenne met coaxiale kabel (Afb. 7)  
Draai de schroeven op de steun los en steek de kabel van onderuit door de ring. Sluit vervolgens de afgestripte kern op de bovenste schroef (aansluiting) aan.  
De steunring werkt als massa-aansluiting.
- Antennekabel (bij het toestel geleverd) (Afb. 8)  
Aansluiten op de 300 Ohm-aansluiting.  
Wees voorzichtig dat de antennekabel niet in aanraking komt met andere aansluitingen.
- Voor het verkrijgen van de beste FM-ontvangst wordt de bijgeleverde antennekabel gebruikt. Bevestig de antenne op een plaats waar de ontvangst het best is. Zorg ervoor dat de antennekabel volledig uitgestrekt is (in T-vorm).

#### Voor West-Duitsland

Bij gebruik van het IEC-type antenne-aansluiting (Afb. 9)  
De IEC-aansluiting op de dit model kan gebruikt worden voor ontvangst van FM-uitzendingen. Verbind deze aansluiting met de RADIO-aansluiting van de huisantenne. De vereiste kabel voor de kabel is DIN 45 332. Raadpleeg de JVC vertegenwoordiging voor verdere details.

#### FM-draadantenne (Afb. 9 voor West-Duitsland)

De bijgeleverde FM-kabelantenne kan tijdelijk op de 75 Ohm coaxiale aansluiting aangesloten worden.

#### Aansluiten van de FM-verbinding (Voor Zwitserland)

Bij een 75 Ohm antenne (Afb. 11)

1. Verwijder de behuizing door aan beide kanten te drukken.
2. Bevestig de coaxiaaldraad.
3. Trek de gestripte draad sterker aan.
4. Verwijder de ring en bevestig hem aan de achterkant van de behuizing om hem niet te verliezen.
5. Breng de behuizing weer aan.

#### Bij een 300 Ohm antenne (Afb. 10)

Sluit de voedingsantenne op de FM aansluiting aan zoals in het diagram is aangegeven.  
Sluit de FM aansluiting aan op de 75 Ohm COAXIAL aansluiting. (Afb. 12)

#### TIPS VOOR BETERE FM-ONTVANGST

Probeer een antenne te vinden die de beste ontvangst geeft bij de tuner.

- Een buitenantenne met meer elementen heeft een hogere versterking en scherpere gerichtheid.
- Probeer de richting waar de meerwega-interferentie het minste is: Zet de 16 kHz S.E.A. knop in de maximum en de 63 Hz en 250 Hz knoppen in de minimum stand, luister vervolgens naar een uitzending bij een relatief hoog volumeniveau en stel de antenne zodanig in dat vervorming en ongewenste ruis tot een minimum beperkt blijven.

#### Antenas de FM

(Fig. 7 y 8 Excepto para la Rep. Federal de Alemania y Suiza)

- Antena de 75 ohmios con cable coaxial (Fig. 7)  
Afloje los tornillos del soporte e inserte el cable en el anillo desde la parte inferior. Luego conecte el núcleo despedido al tornillo superior del terminal. El anillo del soporte trabaja como el terminal a tierra.
- Antena secundaria (suministrada en esta unidad) (Fig. 8)  
Conecte con el terminal de 300 ohmios. Asegúrese de que los cables de la antena secundaria no toquen ningún otro terminal.
- Para conseguir la mejor recepción de FM utilizando la antena secundaria provista, coloque la antena en un sitio donde la recepción sea la más fuerte. Asegúrese de que la antena esté completamente extendida siguiendo la forma de una "T".

#### Para Alemania Federal

Utilización del terminal de antena del tipo IEC (Fig. 9)

El terminal de antena del tipo IEC en este modelo puede ser utilizado para captar radio-difusiones de FM. Conecte este terminal al terminal indicado con "RADIO" de la antena del hogar. El cable de conexión adecuado es el DIN 45 332. Para mayores detalles sirvase consultar con su concesionario.

#### Antena de alambres para FM (Fig. 9: Para Alemania Federal)

La antena de cables de FM provista puede ser conectada temporalmente al enchufe coaxial de 75 ohmios.

#### Cómo conectar el conector FM (Para Suiza)

(En el caso de una antena de 75 ohmios.) (Fig. 11)

1. Extraiga la caja presionando ambos lados.
2. Fije el conductor coaxial.
3. Apriete el extremo pelado del cable.
4. Extraiga el aro y fíjelo a la parte posterior de la caja para evitar perderlo.
5. Instale la caja.

#### En el caso de una antena de 300 ohmios (Fig. 10)

Fije la antena de alimentación al conector de FM tal como se muestra en la figura.  
Conecte el conector de FM al terminal COAXIAL de FM de 75 ohmios. (Fig. 12)

#### CONSEJOS PARA UNA MEJOR RECEPCION DE FM

Trate de encontrar la antena más adecuada para conseguir el mejor comportamiento funcional de su sintonizador.

- Una antena exterior que dispone de más elementos tiene una ganancia mayor y una directividad más precisa.
- Busque la dirección en la cual la interferencia por trayectoria múltiple sea mínima: coloque la perilla 16 kHz S.E.A. al máximo y las perillas 63 Hz y 250 Hz al mínimo, luego escuche una radiodifusión a un volumen relativamente alto y fije la antena de tal modo que se reduzca considerablemente la distorsión y el ruido indeseado.

#### FM antenner (Fig. 7 och 8)

- 75 ohms antenn med kozaxialkable (Fig. 7).  
Lossa skruvarna på fästet och för in kabeln i bygeln underifrån. Anslut den avskalade inre ledaren till den övre terinalanslutningen. Fästbygeln fungerar som jordanslutning.
- Bandantenn (s.k. "T"-antenn) (Fig. 8)  
Ansluts till 300 ohms anslutningen.  
Se noga till att bandantennen inte kommer i kontakt med intilliggande uttag.
- Placera bandantennen så att bästa möjliga mottagning erhålls vid FM-mottagning. Sträck ut bandantennens ändrar så att ett "T"-formas.

#### För Västtyskland

Användning av antennkontakt av IEC-typ (Fig. 9):

Antennkontakten av IEC-typ på denna modell kan användas vid mottagning av utsändningar på FM-bandet. Skjut in kontakten i centralantennens uttag märkt "RADIO". Lämplig anslutningskabel har beteckningen DIN 45 332. Fråga en JVC-handlare för närmare detaljer.

#### FM trådentenn (Fig. 9: för Västtyskland)

Den medföljande FM trådentennen kan anslutas tillfälligt till kontakten för 75 ohms koxiakabel.

#### Anslutning av FM-kontakten (För Schweiz)

Med en 75 ohms antenn (Fig. 11)

1. Öppna genom att trycka in båda sidor.
2. Fäst koxiakabeln.
3. Skruva fast den blottade kärntråden.
4. Ta bort ringen och fäst den på kontakt-donets baksida så att den inte kommer bort.
5. Sätt tillbaka locket.

#### Med en 300 ohms antenne (Fig. 10)

Anslut nedledningen till FM-kontakten som bilden visar.

Anslut FM-kontakten till FM 75 ohm COAXIAL-anslutningen. (Fig. 12)

#### TIPS FÖR BÄTTRE FM-MOTTAGNING

Försök att hitta den lämpligaste antennen och rikta in den på bästa sätt.

- En utomhusantenn med fler element har högre förstärkning och skarpare riktverken.
- Vrid antennen i den riktning där flervägsinterferensen är lägst: ställ 16 kHz SEA LEVEL kontrollerna i max-läge samt 63 Hz och 250 Hz kontrollerna i min-läge. Lyssna därefter till en sändning med relativt hög volym och rikta antennen så att distorsion och störningar minimeras.

## DESCRIPTION AND FUNCTIONS

- 1 FM/AM indicator**  
"FM" is displayed when an FM broadcast is received, and "AM" is displayed during AM broadcast reception.
- 2 Frequency indicator**  
The tuned in frequency is displayed digitally. Three or four digits (kHz) are displayed during AM reception and five digits (MHz) are displayed during FM reception.
- 3 TUNER PRESET indicator**  
This shows the preset channel selected by the numeric keypad, for a total of 40 FM and AM stations. It also shows the station number to be programmed while programming or monitoring programmed broadcasts.
- 4 STEREO indicator**  
When an FM stereo broadcast is being received, this indicator lights. When the MODE indicator shows MONO even if an FM stereo broadcast is received, this indicator will not light; press the FM MODE/MUTE button so that AUTO is shown.
- 5 FM MODE indicator**  
This indicator shows AUTO or MONO according to the setting of the FM MODE/MUTE button.
- 6 FM MUTE indicator**  
This indicator shows ON or OFF according to the setting of the FM MODE/MUTE button.
- 7 MEMORY indicator**  
When the MEMORY button is pressed, this indicator lights for about 5 seconds. When the AUTO MEMORY button is pressed, this indicator blinks for about 5 seconds.

## BESCHREIBUNG UND FUNKTIONEN

- 1 FM/AM-Anzeige**  
Bei FM-Empfang wird FM angezeigt, bei AM-Empfang AM.
- 2 Frequenzanzeige**  
Die abgestimmte Frequenz wird numerisch angezeigt. Vier Ziffern (kHz) zeigen AM-Empfang an. Fünf Ziffern (MHz) zeigen FM-Empfang an.
- 3 Tuner-Senderspeicheranzeige (TUNER PRESET)**  
Zeigt die Nummer des über die Zifferntasten angewählten Senderspeichers an, für insgesamt 40 Senderspeicher (FM/AM). Zeigt auch die Sendernummer bei Programmierung oder bei Programm-Überprüfung an.
- 4 Stereoanzeige (STEREO)**  
Diese Anzeige leuchtet bei Empfang einer FM-Stereo-Sendung. Wenn die MODE-Anzeige auch bei Empfang einer FM-Stereo-Übertragung MONO anzeigt, leuchtet diese Anzeige nicht. Die FM MODE/MUTE-Taste betätigen, um auf AUTO zu schalten.
- 5 FM-Betriebsartanzeige (FM MODE)**  
Diese Anzeige zeigt AUTO oder MONO an, je nach Stellung der FM MODE/MUTE-Taste.
- 6 FM-Stumfabstimmungsanzeige (FM MUTE)**  
Diese Anzeige zeigt ON (Ein) oder OFF (Aus) an, je nach Stellung der FM MODE/MUTE-Taste.
- 7 Speicheranzeige (MEMORY)**  
Nach Betätigen der MEMORY-Taste leuchtet diese Anzeige für ca. 5 Sekunden. Nach Betätigen der AUTO MEMORY-Taste blinkt diese Anzeige für ca. 5 Sekunden.

## DESCRIPTION ET FONCTIONS

- 1 Indicateur FM/AM**  
"FM" est affiché quand une émission FM est reçue, et "AM" est affiché pendant la réception d'une émission AM.
- 2 Indicateur de fréquence**  
La fréquence syntonisée est affichée de façon numérique. Trois ou quatre chiffres (kHz) sont affichés en réception AM, cinq chiffres (MHz) sont affichés pendant la réception FM.
- 3 Indicateur de présélection de syntonisation (TUNER PRESET)**  
Il indique le canal présélectionné par le clavier numérique, pour un total de 40 stations FM et AM. Il indique également le numéro de station programmé pendant la programmation ou le contrôle des émissions programmées.
- 4 Indicateur STEREO**  
Quand une émission FM stéréo est reçue, cet indicateur s'allume. Quand l'indicateur MODE montre "MONO", il ne sera pas allumé même si une émission FM stéréo est reçue. Pour recevoir l'émission en stéréo, appuyer sur la touche FM MODE/MUTE pour que "AUTO" apparaisse.
- 5 Indicateur FM MODE**  
Cet indicateur montre AUTO ou MONO en fonction du réglage de la touche FM MODE/MUTE.
- 6 Indicateur FM MUTE**  
Cet indicateur montre ON ou OFF en fonction du réglage de la touche FM MODE/MUTE.
- 7 Indicateur de mémoire (MEMORY)**  
S'allume pendant environ cinq secondes quand la touche MEMORY est pressée. Clignote pendant environ cinq secondes quand la touche AUTO MEMORY est pressée.

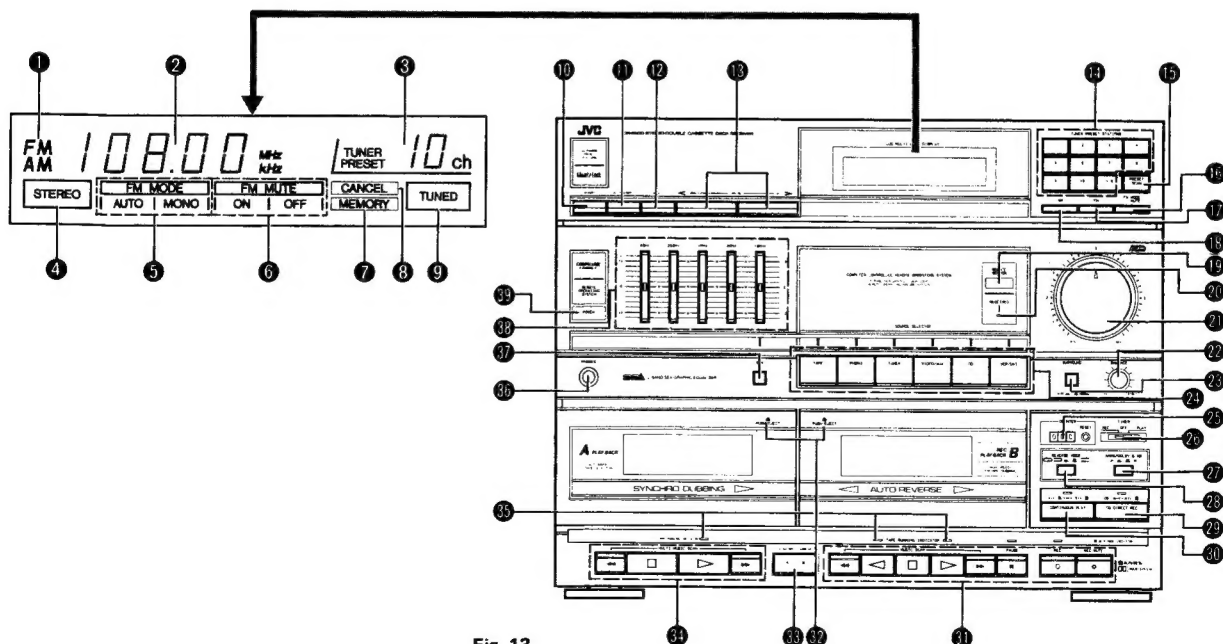


Fig. 13  
Abb. 13  
Afb. 13



# **8 CANCEL indicator**

This indicator lights when the CANCEL button is pressed to erase the preset station memory.

# **9 TUNED indicator**

If a broadcast is received correctly, this indicator lights.

# **10 MEMORY**

When this button is pressed, the MEMORY indicator will light for about 5 seconds to show that the memory is ready to receive preset station information. Press one of the TUNER PRESET STATIONS buttons while the MEMORY indicator is lit.

## **Note:**

- After the MEMORY indicator has gone out, pressing the TUNER PRESET STATIONS button will not store the frequency in memory; in this case, press this button again.

# **11 AUTO MEMORY**

Press this button so that the MEMORY indicator blinks. Now select the desired TUNER PRESET STATIONS button with the numeric keypad while the MEMORY indicator blinks; the tuner scans the frequencies in the order of increasing frequency and, when a broadcast is detected, the TUNER PRESET display blinks for about 5 seconds. If you don't want to store the frequency of the broadcast in memory, press this button again within 5 seconds; the auto memory operation will start again. If the button is not pressed, after the MEMORY indicator blinks for 5 seconds, the current frequency is stored in the memory of desired TUNER PRESET STATIONS button, and scanning restarts. The same function is repeated for all channels. When the frequency is scanned to the top of the band, the auto memory function stops and the channel number in which the highest frequency is stored is displayed. If no frequencies have been stored, the top frequency in the band will be displayed. When all channel memories have frequencies stored in them, the last frequency is tuned to and its channel number is shown. For more details, refer to "How to operate the auto memory function" on page 35.

## **Notes:**

- Auto memory will not function if the preset channel number is input with the numeric keypad after the MEMORY indicator has gone out.

**Note: (For DR-E500LBK only)**

- If the auto memory operation is started in the LW band, and the upper limit frequency is reached (353 kHz or 290 kHz), it will automatically transfer to the lowest frequency in the MW band, and the auto memory operation will continue.

# **12 CANCEL**

When this button is pressed, the CANCEL indicator will light for about 5 seconds. Pressing a TUNER PRESET STATIONS button while the CANCEL indicator is lit will erase the memory for the station that was assigned to that button.

# **13 TUNING**

**DOWN ( < ):** To lower receiving frequency, press this button.

**UP ( > ):** To raise receiving frequency, press this button.

**DR-E500BK:** Each time that you press this button, the FM frequency will change by a 50 kHz or 100 kHz step, and AM frequency by a 9 kHz or 10 kHz step.

**DR-E500LBK:** Each time that you press this button, the FM frequency will change by a 50 kHz step, MW by 9 kHz step, and LW by a 1 kHz step. This unit is constructed so that MW and LW can be changed automatically by pressing the tuning button. For LW, if you want to raise the frequency, it can be changed automatically from 353 kHz to 522 kHz. Conversely, if you wish to lower the frequency, it can be automatically changed from 522 kHz to 353 kHz. (For Italy from 522 kHz to 290 kHz).

Pressing either button for more than 1 second and then releasing it starts auto tuning, when a broadcast is received, tuning will stop. If either button is kept held in, scanning continues even when a broadcast is received. In auto tuning, pressing either button stops scanning. During tuning toward higher frequencies, when the upper limit frequency (108.0 MHz for FM) is reached, the frequency will change to the lower limit (87.50 MHz for FM) and then auto tuning restarts in the direction of increasing frequency. During tuning toward lower frequencies, when the lower limit (87.50 MHz for FM) is reached, the frequency will change to the upper limit (108.0 MHz for FM) and auto tuning restarts in the direction of lower frequencies. The same operation is performed in AM tuning.

## **Channel spacing**

Band Area	FM	AM (MW)	AM (LW)
Europe, UK	50 kHz	9 kHz	1 kHz
Australia	50 kHz	9 kHz	—
Other areas	50 kHz	9 kHz or 10 kHz	—

An AM channel spacing switch is provided on the rear panel for selecting 9 kHz or 10 kHz steps according to your area.

(Not provided on tuners for U.K., Australia and Continental Europe.)

## **Note:**

- Before changing over the channel spacing switch, be sure to set the POWER button to OFF.

Example  
Beispiel  
Exemple  
Voorbeeld  
Ejemplo  
Exempel

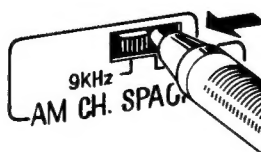


Fig. 14  
Abb. 14  
Afb. 14

To switch over, use the tip of a ball-point pen as shown in Fig. 14.

# **14 Preset channel numeric keypad (1 to 10, +10)**

Up to 40 FM or AM broadcast stations can be preset with this unit. After presetting, select the desired channel by inputting the preset channel number with these buttons. When selecting a preset channel numbered "1" to "10", just press the corresponding numeric keypad. When selecting preset channels numbered 11 or above, first press the +10 button the required number of times, then press a button from 1 to 10. When the desired preset channel is recalled, the display shows the preset channel number and the corresponding frequency.

# **15 PRESET SCAN**

This lets you scan preset channels to find a broadcast you want to listen to. When the PRESET SCAN button is pressed, preset scanning starts. If you have tuned to the current station using the 10 KEY keypad, the tuner scans to the next higher preset channel and the broadcast is received for about 4 seconds with the preset channel number blinking. It then tunes to higher preset channels in sequence. When it reaches the top preset channel, it moves to the button channel and scans up until it reaches the original channel, at which point it stops. If you have tuned to the current station in any other way, scanning will start from preset channel 1 and finished after preset channel 40 has been received, then the broadcast being received before preset scanning was started will be heard again. When you hear your required broadcast, press the PRESET SCAN button again to stop preset scanning. During preset scanning, preset channels which have been cancelled using the preset cancel function will not be received.

# **16 FM MODE/MUTE**

Press this button so that FM MODE "AUTO" and FM MUTE "ON" light in the display for normal FM reception. For weak or noisy FM stereo broadcast, press this button so that FM MODE "MONO" and FM MUTE "OFF" in the display light. The broadcast will be heard in mono but the clarity of reception will be improved.

# **17 FM**

Press this button to listen to the FM broadcast.

# **18 AM (DR-E500BK), AM (MW/LW) (DR-E500LBK)**

Press this button to listen to the AM (MW/LW) broadcast.

# **19 REMOTE SENSOR**

This sensor detects the signals transmitted from the remote control unit.

# **20 RECEIVED indicator**

Lights when this receives signals transmitted from the remote control unit.

**21 VOLUME**

Use to adjust the volume of the speakers or headphones.

**Note:**

- Set the volume so as not to disturb your neighbors, especially late at night.

**22 BALANCE**

Balances the volume between the left and right speakers.

**23 SURROUND**

Press this button to WIDE (—) with a stereo signal for an expanded sound field. Usually set this switch to NORMAL (■).

**24 SOURCE SELECTOR**

The indicator of the source selected lights.

**TAPE:** Press this button to listen to tapes.

**PHONO:** Press this button to listen to records.

**TUNER:** Press this button to listen to an AM (MW/LW)/FM broadcast.

**VCR/DAT:** Press this button to listen to the source connected to the VCR/DAT terminals.

**CD:** Press this button to listen to a connected compact disc player.

**VIDEO/AUX:** Press this button to listen to the source connected to the VIDEO/AUX terminals.

**25 COUNTER**

This display registers the position of the tape in deck B. Advancing the tape incrementally increases the tally, and rewinding the tape decreases it. Pressing the RESET button sets this display to "000".

**26 TIMER**


Recording or playing back at the desired time is possible using an optional timer.

Normally, set this knob to OFF.

**27 ANRS/DOLBY B NR**

**ON (—):** Press this button to this position when recording with the ANRS/DOLBY B NR system or playing back a tape recorded with these systems.

**OFF (■):** Press this button to this position when the ANRS/DOLBY B NR system is not used.

\* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.  
"DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

**28 REVERSE MODE**

Use to select the mode when recording or playing back using tape deck B.

**OFF (■):** When recording or playing back one side of a tape.

**ON (—):** When performing continuous play or bi-directional recording.

This function is effective only for the tape in deck B.

**29 CD DIRECT REC**

Press this button to directly record a compact disc on tape deck B. The indicator lights during the CD direct recording.

**30 CONTINUOUS PLAY**

Press this button to play the tapes in deck A and deck B continuously. When this button is pressed, the indicator lights.

**31 DECK B**

**Play (▷):** Press this button to listen to the tape as it winds in the forward direction.

**Play (◁):** Press this button to listen to the tape's reverse side.

**Fast forward/rewind**

**(▶▶):** Press this button to quickly wind the tape from the left to the right reel.

**(◀◀):** Press this button to quickly wind the tape from the right to the left reel.

**Stop (□):** Press to stop the tape while the tape is running.

**PAUSE (||):** Press to temporarily stop the tape during recording or playback. To start play again, press the Play (▷ or ◁) button. In the PAUSE mode, the indicator lights.

**REC (○):** While holding this button pressed, press the (▷) or (◁) button to record. In the REC mode, the indicator lights.

**REC MUTE (○):** Press this button to create a non-recorded section between songs.

**32 PUSH EJECT (▲)**

Press to load or unload a cassette.

**33 HIGH SPEED DUBBING (A ▷ B)**

Press this button for high-speed dubbing from tape deck A to tape deck B.

**34 DECK A**

For (□), (▶▶), (◀◀) and PUSH EJECT, the operation is the same as that for deck B.

**Play (▷):** Press this button to play a tape.

**35 Tape running indicators**

These show the tape movement. They blink slowly during playback, and blink rapidly in the FF/REW modes.

**36 PHONES jack**

Plug in here when using headphones.

**Notes:**

- Plugging in headphones switches off the sound from the speakers.
- Set the volume properly so that sound from the headphones does not hurt your ears.

**37 SEA (ON/OFF)**

Press this button to perform S.E.A. compensation and S.E.A. recording. The indicator above the SEA button lights in red to indicate that S.E.A. compensation is taking place. Pressing this button again causes the signal to bypass the S.E.A. circuit, and the indicator goes out.

**Note:**

- Since the S.E.A. circuit is always off when the POWER button is pressed to ON, press this button to ON when performing S.E.A. compensation or S.E.A. recording.

**38 S.E.A. graphic equalizer system**

Adjust the tone as required using these knobs.

**63 Hz:** Raise to emphasize the very low bass response of organs, drums and contrabass. Raising this knob produces stable and solid sound to eliminate unclear sound at low frequencies, lower the knob.

**250 Hz:** Lower the knob to reduce reflected sound in the listening room or to eliminate unclear sound caused in a small listening room.

**1 kHz:** Most effective in emphasizing or deemphasizing the human voice. Raise the knob to cause the vocalist to be brought to the foreground, or lower for the vocalist to recede into the background.

**4 kHz:** Raise this knob slightly so that the tension of strings can be sensed and vigorous sound can be obtained. Lower the knob for easy listening.

**16 kHz:** Boosting this frequency range properly adds to the delicacy of highs, with cymbals and triangles resounding in a more ear-pleasing way, and provides a feeling of extension.

This knob can also be used to compensate for cartridge response since most moving magnet cartridges have resonance peaks in the frequency range from 10 kHz to 20 kHz.

**39 POWER**

**ON (—):** Press this button to turn the power on. When the power is applied, the display will light and the SOURCE SELECTOR is set to TUNER unless the TIMER knob 26 is set to PLAY.

**OFF (■):** Set to this position to turn the power off.



## REMOTE CONTROL UNIT (RM-SE500)

### Notes:

- CD remote control operation is possible only when a JVC COMPU LINK CD player has been connected to this unit by connecting a remote cable between the SYNCHRO terminals of both units.
- ④ - ⑪ are controls for the CD player.

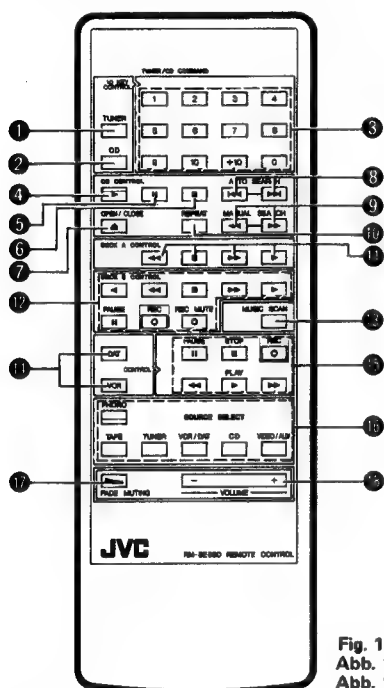


Fig. 15  
Abb. 15

### ① TUNER

Press to listen to an AM or FM broadcast. Pressing these buttons changes the function of the TUNER/CD COMMAND keys to preset station selection.

### ② CD

Select CD tracks by depressing this button and the TUNER/CD COMMAND keys.

### ③ TUNER/CD COMMAND

① - ⑩, +⑩, ⑦: From the preset channels in which frequencies have already been stored, check the channel number corresponding to the broadcast you want to hear, and press that channel number button. Examples:  
Channels 1 - 10: For Channel 5, press button ⑤. For Channel 10, press button ⑩.  
Channel 17: Press +⑩ button once and then button ⑦.  
Channel 20: Press +⑩ button once and then button ⑩.  
Channel 25: Press +⑩ button twice and then button ⑤.

### Notes:

- For operations of the CD player, refer to the instruction book provided with the CD player.
- For the tuner operation, pressing ⑦ button has no effect.

### ④ Play (▶)

Press this button to play a compact disc.

### ⑤ Pause (⏸)

Press this button to stop play temporarily. To start play again, press the Play (▶) button.

### ⑥ Stop (■)

Press this button to stop play. The standby mode is engaged.

### ⑦ OPEN/CLOSE (⏏)

Press this button to open or close the disc tray for loading or unloading a compact disc. Pressing this button during play stops play and the disc tray slides out.

### ⑧ AUTO SEARCH

(◀◀): Press this button to move the pickup to the beginning of the current song while in the middle of play. Then, each time it is pressed, the pickup will skip to the beginning of the previous selection. Keeping this button pressed causes the pickup to skip back continuously.

(▶▶): Press this button to move the pickup to the beginning of the next song. After this, each time this button is pressed, the pickup moves forward by one selection. Keeping it pressed causes it to skip forward continuously.

### ⑨ MANUAL SEARCH

(◀◀) (backward): Press to search for the required tune by moving the sensor back.

(▶▶) (forward): Press to search for the required tune by moving the sensor forward; sound can be heard at reduced volume level while search is taking place in the play mode.

### ⑩ REPEAT

Press this button to repeat the play of the whole disc or the programmed tunes.

### ⑪ DECK A CONTROL

(◀): Press to quickly wind the tape from the right to the left reel.

(■): Press to stop the tape.

(▶): Press to quickly wind the tape from the left to the right reel.

(▶▶): Press to play the tape.

### ⑫ DECK B CONTROL

For (◀), (■) and (▶), the operation is the same as that for DECK A.

(▶): Press to play the tape in the forward direction.

(◀): Press to play the reverse side of the tape.

PAUSE (⏸): Press to stop play or recording temporarily. To start it again, press the Play button.

REC (Ⓜ): While holding this button pressed, press the (▶) or (◀) button to record.

REC MUTE (Ⓜ): Press this button together with the (Ⓜ) button to create a non-recorded section for about 4 seconds. After this, the recording-standby mode is engaged.

### ⑬ MUSIC SCAN (□)

Press this button together with the (▶) or (◀) of tape deck A or B to briefly play the beginning of each selection.

### ⑭ CONTROL

DAT: Press this button to operate a JVC DAT deck connected to the VCR/DAT terminals.

VCR: Press this button to operate a JVC VCR.

### Note:

- Connect the remote cable of the digital audio tape deck to the COMPU LINK-1/ SYNCHRO terminals of this unit.

### ⑮ Operation buttons for the VCR/DAT deck selected by the VCR CONTROL or DAT CONTROL.

⏸ (PAUSE): Press this button to pause during playback or recording. To release this function, press the PLAY button.

■ (STOP): Press this button to stop operation.

Ⓜ (REC): While holding this button pressed, press the PLAY (▶) button to record. When this button is pressed with the PAUSE (⏸) button, REC-PAUSE mode is activated.

▶▶: Press to fast forward the tape.

▶ (PLAY): Press this button to play a tape.

◀◀: Press to rewind the tape.

### ⑯ SOURCE SELECT (□)

PHONO: Press this button to listen to a record.

TAPE: Press this button to listen to tape.

TUNER: Press this button to listen to an AM (MW/LW) or FM broadcast.

VCR/DAT: Press this button to listen to VCR/DAT.

CD: Press this button to listen to CD.

VIDEO/AUX: Press this button to listen to VIDEO/AUX.

### ⑰ FADE MUTING (◻)

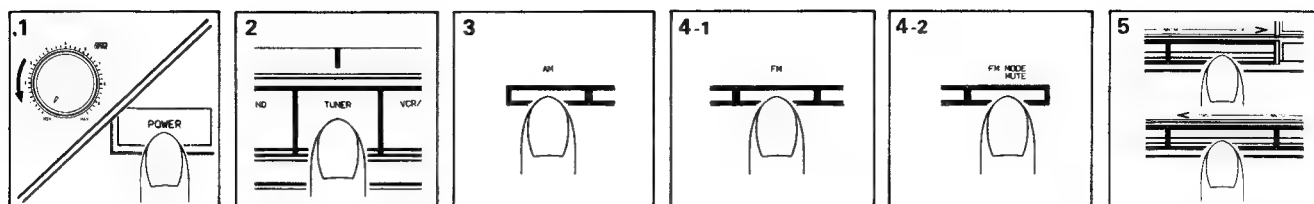
Press this button to lower the volume in steps. The volume is further decreased each time this button is pressed.

### ⑱ VOLUME (◻ ◻)

Press these buttons to change the volume. To raise the volume, press the + button. To decrease it, press the - button. The volume indicator flickers.

## OPERATION

### LISTENING TO BROADCASTS, RECORDS, CD OR VIDEO/AUX



1. Press the POWER button to ON ( ) after setting the volume knob to minimum.
2. **To listen to broadcasts**  
Press the TUNER button.
3. To listen to an AM (MW/LW) broadcast, press the AM (MW/LW) button.
- 4-1. To listen to an FM broadcast, press the FM button.
- 4-2. Press the FM MODE/MUTE button to AUTO/ON.

#### Note:

- In weak signal areas, set the FM MODE/MUTE button to MONO/OFF. FM broadcasts will be heard in mono but noise is reduced.

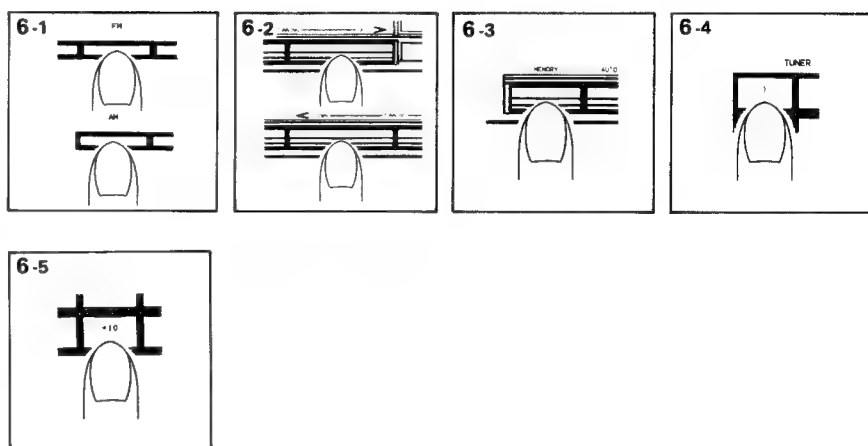
5. Turn in a broadcast with the UP/DOWN TUNING button.  
In areas where signals are optimum, the TUNING indicator lights, when an FM or AM (MW/LW) broadcast is received. If it is an FM stereo broadcast, the FM STEREO indicator lights.

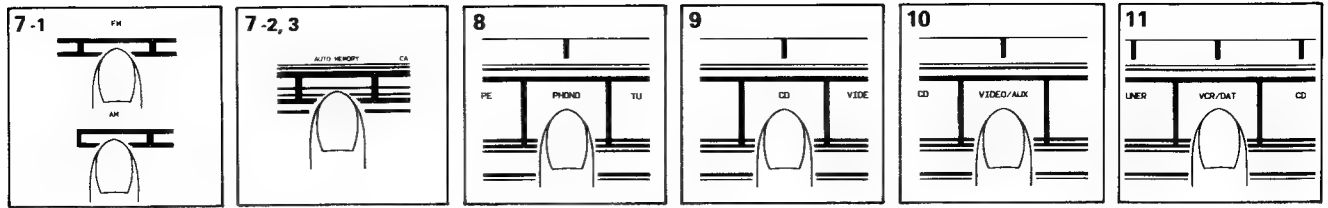
#### Presetting to selected stations (FM or AM)

There are two ways to preset stations using the TUNING buttons (Auto tuning/manual tuning) (Auto memory function).

#### How to operate the auto tuning/manual tuning

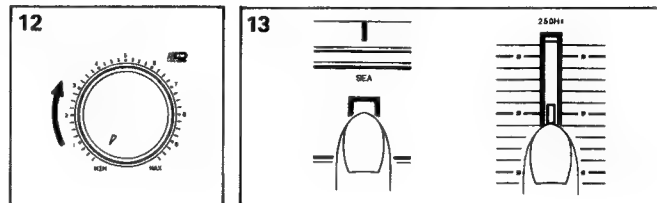
- 6-1. Press the FM or AM button.
- 6-2. Tune to a desired station by pressing the TUNING UP or DOWN button (for auto tuning) or by tapping it (for manual tuning).
- 6-3. Press the MEMORY button so that the MEMORY indicator lights.
- 6-4. Press one of the 10 KEY numeric keys.
- 6-5. Perform the same pre-tuning procedure (steps 2, 3, 4) for any other channels. Pre-tuning is possible for up to 40 stations (for FM and AM).





**How to operate the auto memory function**  
(Refer to ⑪ AUTO MEMORY button on page 13.)

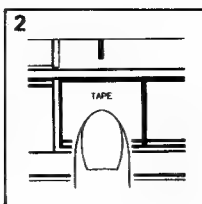
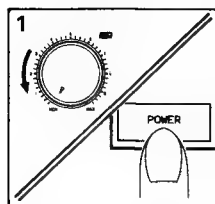
- 7-1. Press the FM or AM button.
- 7-2. Tune to the frequency from which you wish the AUTO MEMORY function to start scanning.
- 7-3. Press the AUTO MEMORY button and one of the preset channel 10 KEY buttons. The AUTO MEMORY indicator lights and auto scanning starts from the displayed frequency towards higher frequencies. When a broadcast is received, the TUNED indicator lights and the selected station number flashes. If you do not press the AUTO MEMORY button again, the MEMORY indicator and the channel number light together and the frequency is stored in memory. This continues until the preset channel with the highest number has a frequency in its memory or auto scanning reaches the highest frequency.



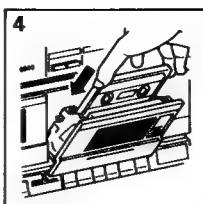
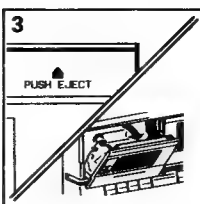
**Note:**

- The broadcast received before the power is shut off will again be received when the power is reapplied because the memory circuit functions retain preset stations. This memory is held for about one week in normal conditions, but may be erased after exceeding this period. In this case, preset stations again.
8. **Listening to a record.**  
Press the PHONO button.  
Operate the turntable.  
Concerning the operation of the turntable, read its instruction book.
  9. **Listening to a compact disc.**  
Press the CD button.  
Concerning the operation of the CD player, read its instruction book.
  10. **When listening to a source connected to VIDEO/AUX**  
Press the VIDEO/AUX button.
  11. **When listening to a source connected to VCR/DAT**  
Press the VCR/DAT button.
  12. Set the volume knob to the desired level.
  13. After pressing the SEA button, adjust the SEA knobs to obtain the tone required.

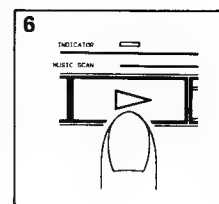
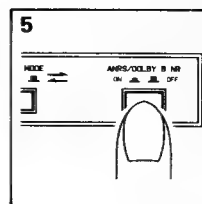
## LISTENING TO TAPES



## BANDWIEDERGABE



## ECOUTE DE BANDES



1. Press the POWER button to ON (—) after setting the volume knob to minimum.
2. Press the TAPE button.

### Preparation for playing back a tape

3. Either tape deck A or B can be used for playback. Press the PUSH EJECT (▲) of the tape deck selected to open the cassette door.
4. Insert cassettes.
5. If a tape recorded with ANRS or DOLBY B Noise Reduction System is used, press the ANRS/DOLBY B NR button to ON (—). If not, set this button to OFF (■). The selection of metal or normal tape is automatic for tape deck A and B.

### When playing back a tape

6. Press the Play (▶) button (tape deck A). Press the Play (▶) or (◀) button (tape deck B).
7. Set the volume to the optimum level.

### Note:

- It is not possible to play tape decks A and B at the same time.

### When interrupting tape play temporarily (tape deck B)

8. Press the PAUSE (■) button. To start play again, press the Play (▶ or ◀) button.

### When fast forwarding or rewinding a tape

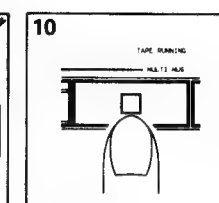
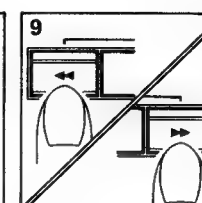
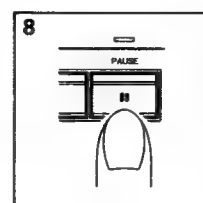
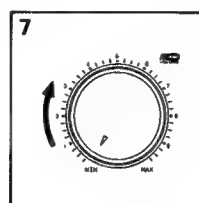
9. To quickly wind the tape from the left to the right reel, press the (◀◀) button. To quickly wind the tape from the right to the left reel, press the (▶▶) button.

### Stopping a tape

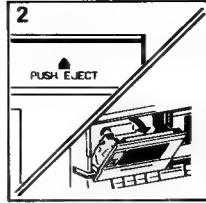
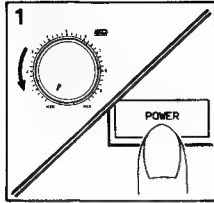
10. Press the (□) button.

### Notes:

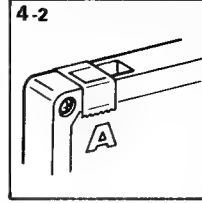
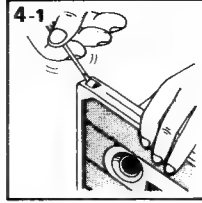
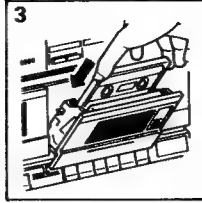
- When unloading the cassette, first press the Stop (□) button, then the PUSH EJECT (▲).
- When turning the power off during tape movement, cassette ejection is impossible. In this case, turn the power on and eject the cassette. During tape movement, the cassette door will not open even though the PUSH EJECT (▲) is pressed.



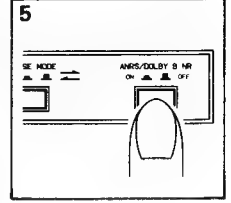
## RECORDING



## AUFNAHME



## ENREGISTREMENT



Use tape deck B for recording. It is not necessary to adjust the recording level because an auto level control circuit is built into this unit.

1. Press the POWER button to ON ( ) after setting the volume knob to minimum.
2. Press PUSH EJECT ( ) to open the cassette door. If the tape is running, press the ( ) button to stop the tape and press PUSH EJECT ( ) to open the cassette door.
3. Insert a cassette.

### Note.

- When S.E.A. recording is not to be performed, set the SEA button to OFF.

- 4-1. Cassettes are provided with protective tabs. After recording, break the left tab with side A toward you when side A is required to be protected, for side B, break the left tab with side B toward you. This avoids accidental erasure. When a tape with its tabs broken is used, it is impossible to record on it.
- 4-2. When a cassette with its tabs broken off is to be used for recording, seal the holes with adhesive tape.

### Notes:

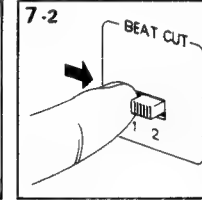
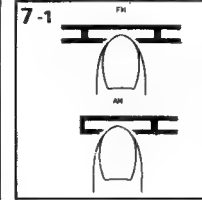
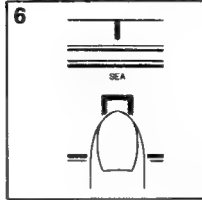
- Metal and normal tapes are automatically switched.
- Using a Chrome (TYPE II) or Ferri-chrome tape is not recommended because this unit does not have the required characteristics.
- 5. To record with ANRS or DOLBY B Noise Reduction, set the ANRS/DOLBY B NR button to ON ( ).

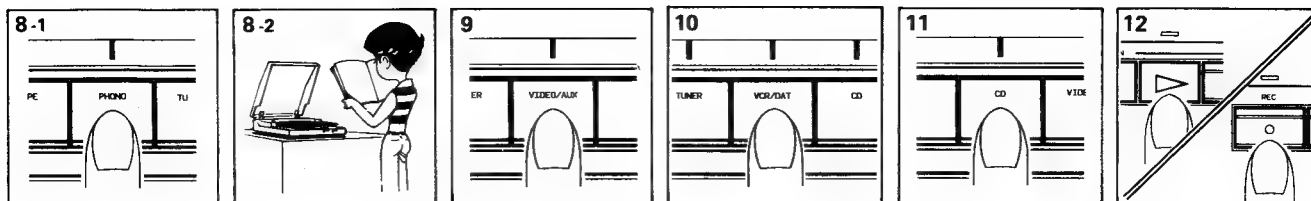
### When performing SEA recording

6. After pressing the SEA ON/OFF button so that the red indicator above the button lights, adjust the SEA controls as required.

### When recording a broadcast

- 7-1. Choose the desired broadcast.  
For an FM broadcast, press the FM button.  
For an AM broadcast, press the AM (MW/LW) button.  
\* For the method of tuning the broadcast, refer to "2. To listen to broadcasts" in the section "OPERATION" on page 33.
- 7-2. When recording an AM (MW/LW) broadcast, beats may occur.  
Set the BEAT CUT knob located on the rear panel to "1" or "2" so that beats are eliminated.





#### When recording a record

8-1. Press the PHONO button.

8-2. Operate the turntable.

Concerning the operation of the turntable, refer to its instruction book.

#### When recording a source from the unit connected to the VIDEO/AUX.

9. Press the VIDEO/AUX button and play the unit.

#### When recording a source from the unit connected to the VCR/DAT terminals

10. Press the VCR/DAT button and play the unit.

#### When recording a compact disc

11. Press the CD button.

Concerning the operation of the CD player, refer to its instruction book.

#### Operation of tape deck B for recording

12. To start recording, press the Play (▶) or (◀) button while holding the REC (○) button pressed. If the REC (○) button is pressed while holding the Play (▶) or (◀) button pressed, recording is impossible.

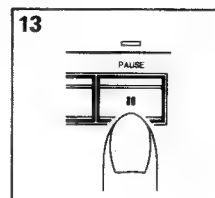
13. To cut an unwanted part, press the PAUSE (||) button; the pause mode is set and the recording is interrupted. To restart the recording, press the Play (▶) or (◀) button.

#### Notes:

- When tape deck A is played back while tape deck B is recording, the tape running speed may temporarily change.

#### Notes:

- As the source is locked to CD during synchro recording, it cannot be switched even if another source button is pressed.
- The synchro recording does not start except for when the REC (○) and PAUSE (||) buttons are pressed simultaneously to set the recording-standby mode.



#### ERASING

Recording on a cassette automatically erases the previous sound.

#### To erase without making a new recording

Set the SOURCE SELECTOR to the tape position. Then, set tape deck B to the recording mode.

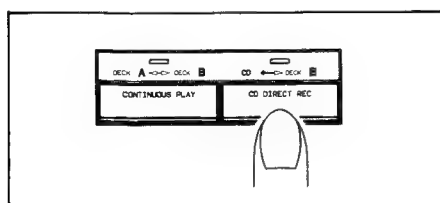
#### NR SYSTEM

When playing a tape recorded with the NR system (ANRS/DOLBY B NR) ON, be sure to set the ANRS/DOLBY B NR button to ON.

#### Notes:

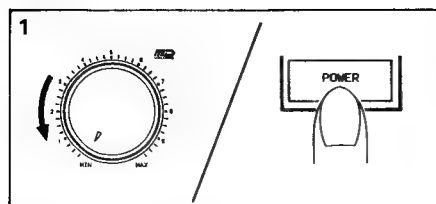
- When the position of the ANRS/DOLBY B NR button for playback is different from that for recording, the sound quality will be changed.
- When recording and playing back with the NR system ON, use tapes recommended on page 57 to reproduce the original music. If a tape with different characteristics is used, the sound quality may be changed.

#### CD DIRECT RECORDING



Just press the CD DIRECT REC button to simultaneously start the play of the JVC COMPU LINK CD player and recording on tape deck B. When the CD player is programmed, the selections can be recorded in the programmed order. After setting this unit to the recording standby mode, by pressing the REC (○) and PAUSE (||) buttons simultaneously, pressing the CD button on this unit or the PLAY button of the CD player also performs synchro recording.

## DUBBING



### Normal speed dubbing

Dubbing means to copy a tape to another tape. Dubbing can be done from tape deck A to tape deck B.

1. Press the POWER button to ON ( ) after setting the VOLUME knob to minimum.
2. Press PUSH EJECT ( ) of tape deck A and B to open the cassette doors.
3. Insert cassettes.
4. Press the ( ) button of tape deck A to scan to the tune to be copied.
5. Set the ANRS/DOLBY B NR button to OFF.
6. Set tape deck B to the record mode (press the ( ) or ( ) button while holding the REC ( ) button pressed).
7. Set tape deck A to the play mode (press the ( ) button).
8. To release the dubbing mode, press the Stop ( ) buttons of both tape deck A and B.

### Note:

- Pressing the source select buttons during dubbing switches the source for recording.

### High speed dubbing

Steps 1, 2, and 3 are the same as for normal speed dubbing.

4. Press the HIGH SPEED DUBBING (A > B) button.
- During dubbing, the volume, tone or source selector may be set to any setting. For example, dubbing can be performed while listening to a broadcast.
5. To stop dubbing, press the Stop ( ) button of tape deck B.

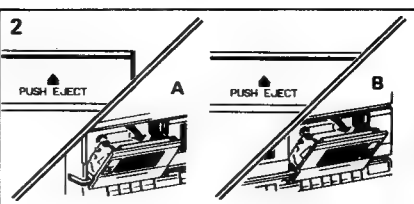
### Notes:

- When stopping high speed dubbing with the Stop ( ) button of tape deck A, tape deck B enters the record mute mode for about 4 seconds, then the REC/PAUSE mode with the high speed dubbing mode engaged.
- The S.E.A. recording is impossible during high speed dubbing.
- During high speed dubbing, the recording is performed with the same NR mode as the played tape in tape deck A regardless of the setting of the ANRS/DOLBY B NR button.
- Certain televisions may be affected by this unit during high speed dubbing. If this happens, turn the power of the TV off or move this unit away from the TV.

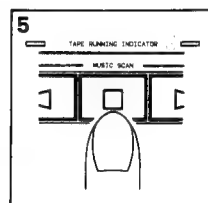
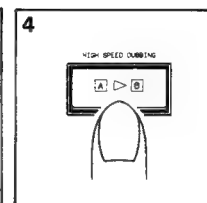
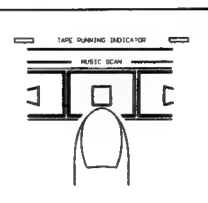
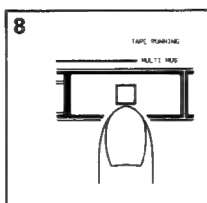
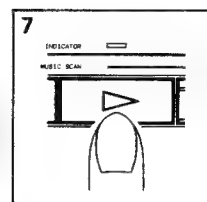
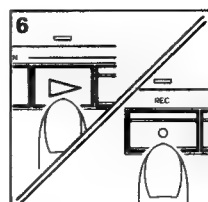
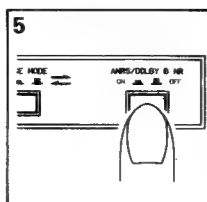
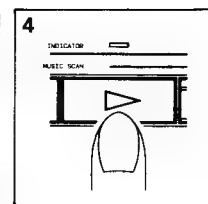
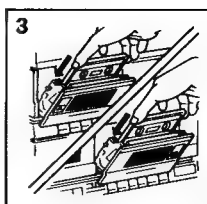
### Notes for dubbing

- It is recommended to use the same type of tape for tape decks A and B because otherwise the recording level may be too high.
- As the tape length for recording may not be enough due to differences in tape speed between tape deck A and tape deck B and variations in tape length etc., use a tape with enough length for recording.

## ÜBERSPIELEN



## COPIE





**AUTO REVERSE FUNCTION**

Tape deck B has the auto reverse function.

- The following explains how this function operates when a cassette is inserted in the cassette holder with side A facing out.

**AUTOREVERSE-FUNKTION**

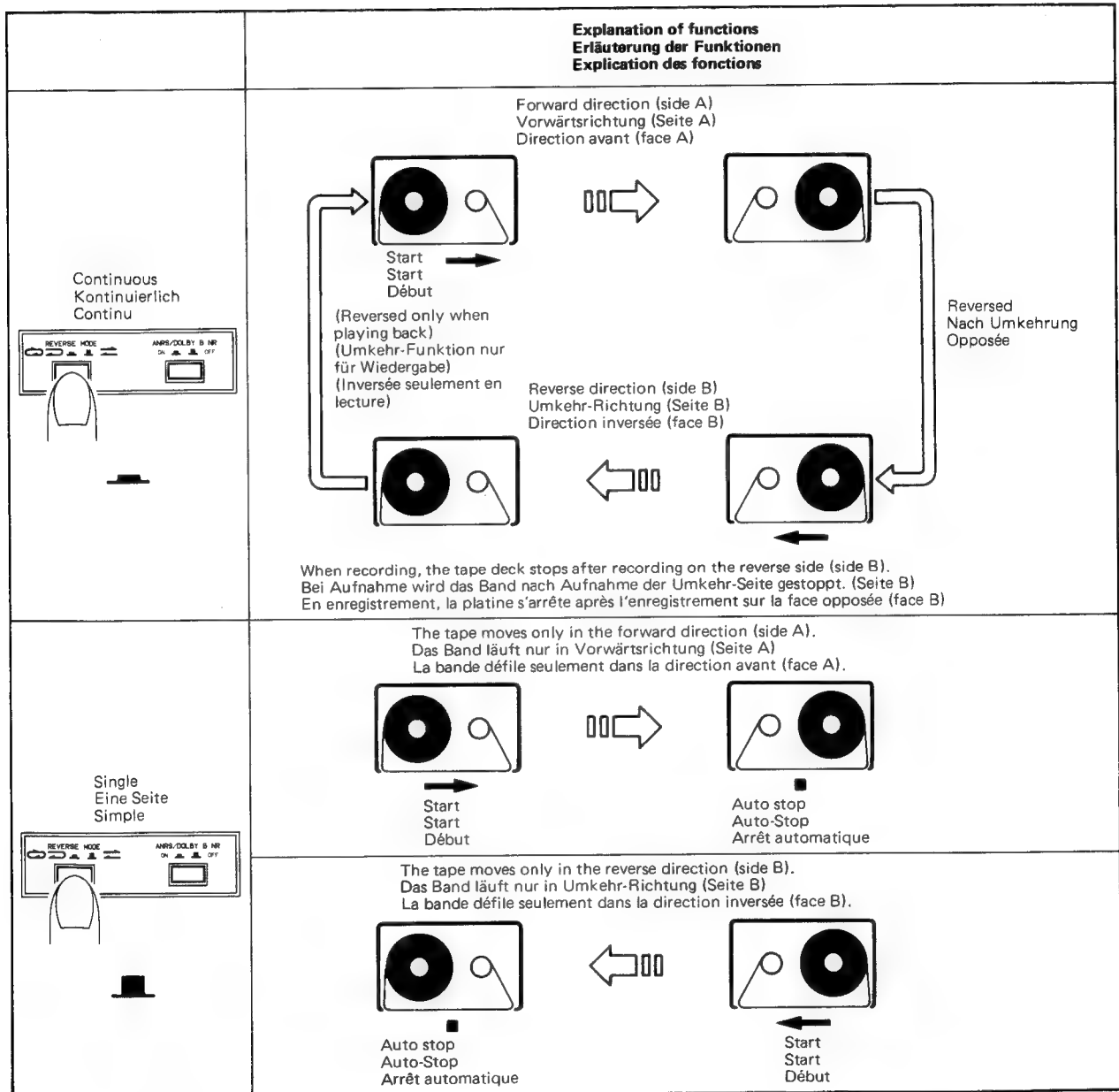
Deck B besitzt eine Autoreverse-Betriebsart.

- Im folgenden wird diese Funktion unter der Annahme erläutert, daß eine Cassette mit nach außen weisender Seite A eingelegt ist.

**FUNCTION D'INVERSION AUTOMATIQUE**

La platine à cassette B dispose de la fonction d'inversion automatique.

- La suite explique ce que fait la fonction quand une cassette est introduite dans le porte cassette avec la face A vers l'extérieur.

**Notes:**

- A tape without a tab does not run when the recording operation is performed. Make sure that a cassette has protective tabs when recording on both sides.
- Be sure to use a cassette with side A facing out to ensure high-quality sound and to avoid accidental erasure.

**Hinweise:**

- Bei einer Cassette ohne Sicherheitszunge kann nicht auf Aufnahme geschaltet werden. Vor Aufnahme auf beide Seiten sicherstellen, daß beide Cassetten-Sicherheitszungen vorhanden sind.
- Darauf achten, Cassetten stets mit Seite A nach außen weisend einzulegen, um hohe Klangqualität zu gewährleisten und um versehentliche Löschungen zu vermeiden.

**Remarques:**

- Une bande sans languette ne défile pas quand l'enregistrement est exécuté. S'assurer qu'une cassette a ses languettes de sécurité en enregistrant sur les deux faces.
- S'assurer d'utiliser une cassette avec la face A placée vers l'extérieur pour garantir un son de haute qualité et pour éviter des effacements accidentels.

- Due to minor differences between cassette case halves, recordings made on a particular side will be best reproduced when played back in the same direction as they were recorded in.

- Infolge minimaler Ungleichheiten zwischen beiden Cassettengehäushälften sollten Cassetten in der bei der Aufnahme verwendeten Richtung abgespielt werden.

- A cause de faibles différences entre les deux côtés de la coque des cassettes, des enregistrements effectués sur une face particulière seront mieux reproduits si la lecture est faite dans la même direction que celle lors de l'enregistrement.

#### UNATTENDED RECORDING OR PLAYBACK USING THE TIMER

- Recording or playback may be controlled using an optional audio timer.
- If the timer is provided with the capability for repeated on/off switching, recording or playback may be repeated.
- Before using this unit, also read the timer's instruction book.
- Recording of a cassette without a tab is not possible.

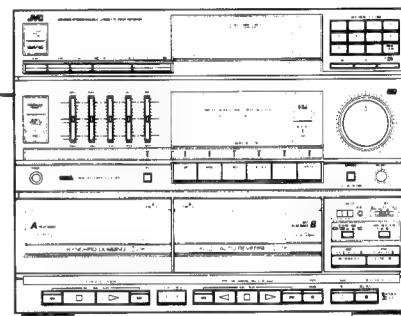
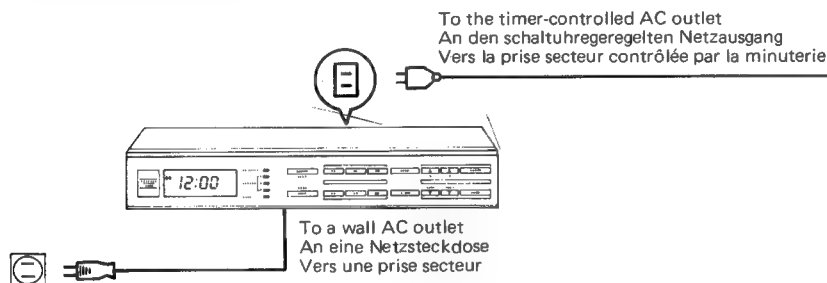
#### UNÜBERWACHTE AUFNAHMEN ODER SCHALTUHRGESTEUERTE WIEDERGABE

- Aufnahme und Wiedergabe können auch über eine geeignete Schaltuhr geregelt werden.
- Falls die Schaltuhr für wiederholte Ein-/Aus-schaltung geeignet ist, können entsprechend Aufnahme- und Wiedergabevorgänge wiederholt durchgeführt werden.
- Vor Gebrauch der Schaltuhr deren Bedienungsanleitung durchlesen.
- Aufnahme mit einer Cassette, die keine Sicherheitszunge(n) mehr vorweist, ist nicht möglich.

#### ENREGISTREMENT ET LECTURE EN DIFFÉRE EN UTILISANT LA MINUTERIE

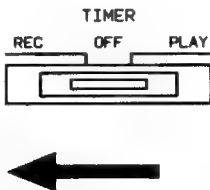
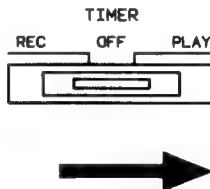
- L'enregistrement ou la lecture peut être commandé en utilisant une minuterie audio optionnelle.
- Si la minuterie est prévue avec la possibilité de répéter les commutations marche/arrêt, l'enregistrement ou la lecture peut être répété.
- Avant d'utiliser cet appareil, lire également le manuel d'instructions de la minuterie.
- L'enregistrement sur une cassette sans languette est impossible.

- How to connect to the timer
- Anschluß der Schaltuhr
- Raccordement à la minuterie



- Be sure to set the power button of the unit to the switched on or off by the timer to its "on" position.
- Sicherstellen, daß das von der Schaltuhr geregelte Gerät eingeschaltet ist.
- S'assurer de bien placer la touche d'alimentation de l'appareil à commuter par la minuterie dans sa position "marche".

Process Vorgang Méthode	Unattended recording Unüberwachte Aufnahme Enregistrement en différé	Playback as an alarm (timer playback) Wiedergabe als Weckfunktion (Schaltuhrwiedergabe) Lecture comme une alarme (lecture par minuterie)
1. Timer operation Schaltuhrbetrieb Fonctionnement de la minuterie	<ul style="list-style-type: none"> <li>• Make sure that the power buttons of the units connected to the timer are set to their "on" positions.</li> <li>• Turn on the timer's power.</li> <li>• Sicherstellen, daß die an der Schaltuhr angeschlossenen Geräte eingeschaltet sind.</li> <li>• Die Schaltuhr einschalten.</li> <li>• S'assurer que les touches d'alimentation des appareils raccordés à la minuterie soient sur leurs positions "marche".</li> <li>• Mettre l'alimentation de la minuterie.</li> </ul>	
2. Operation of amplifier and tuner sections Handhabung von Verstärker und Tuner Fonctionnement des sections amplificateur et syntoniseur	<ul style="list-style-type: none"> <li>• Set the Tuner button on.</li> <li>• Tune to the broadcast to be listened to.</li> <li>• S.E.A. recording is impossible when timer recording is performed.</li> <li>• Die Tunertaste betätigen.</li> <li>• Den gewünschten Sender einstellen.</li> <li>• Bei Schaltuhr-gesteuerter Aufnahme ist keine S.E.A.-Aufnahme möglich.</li> <li>• Placer la touche du syntoniseur sur marche.</li> <li>• Syntoniser sur l'émission à écouter.</li> <li>• L'enregistrement S.E.A. est impossible quand un enregistrement par minuterie est effectué.</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust the volume. (During timer playback, the S.E.A. circuit is set to OFF.)</li> <li>• Die Lautstärke regeln. (Bei Schaltuhr-gesteuerter Wiedergabe ist die S.E.A.-Schaltung abgeschaltet.)</li> <li>• Régler le volume. (Pendant la lecture par minuterie, le circuit S.E.A. n'est pas en marche.)</li> </ul>

<p>3. Tape deck operation Cassettendeck- Handhabung Fonctionnement de la platine à cassette</p>	<ul style="list-style-type: none"><li>● Insert a cassette for recording in tape deck B and prepare for recording.</li><li>● Setting the REVERSE MODE knob to "⬅" allows the bi-directional recording.</li><li>● Set the TIMER knob to REC.</li><li>● Die zu bespielende Cassette in Deck B einlegen und die für Aufnahme erforderlichen Bedienschritte vornehmen.</li><li>● Bei Position "⬅" des REVERSE MODE-Schalters ist Aufnahme auf beiden Seiten möglich.</li><li>● Den TIMER-Schalter auf REC einstellen.</li><li>● Introduire une cassette pour l'enregistrement sur la platine à cassette B et préparer pour l'enregistrement.</li><li>● Le réglage du commutateur REVERSE MODE sur "⬅" permet l'enregistrement sur les deux faces.</li><li>● Placer le commutateur TIMER sur REC.</li></ul> <div data-bbox="542 633 753 822"><p style="text-align: center;">TIMER</p><p style="text-align: center;">REC    OFF    PLAY</p></div>	<ul style="list-style-type: none"><li>● Insert the cassette to be listened to in tape deck A or B.</li><li>● If cassettes are loaded in both tape decks, only the tape in tape deck B will be played. To play a tape in tape deck A, load only deck A with a cassette.</li><li>● For tape deck B, if the REVERSE MODE knob is set to "⬅", continuous play is possible.</li><li>● Die abzuspielende Cassette in Deck A oder B einlegen.</li><li>● Werden Cassetten in beide Decks eingelegt, erfolgt nur für Deck B Wiedergabe. Soll von Deck A wiedergegeben werden, nur in Deck A eine Kassette einlegen.</li><li>● Mit Deck B ist bei Position "⬅" des REVERSE MODE-Schalters kontinuierliche Wiedergabe möglich.</li><li>● Introduire la cassette à écouter dans la platine à cassette A ou B.</li><li>● Si des cassettes sont placées dans les deux platines, seulement la bande dans la platine B sera lue. Pour lire une bande dans la platine A, charger seulement que la platine A avec une cassette.</li><li>● Pour la platine à cassette B, si la commutateur REVERSE MODE est placée sur "⬅", la lecture continue est possible.</li></ul> <div data-bbox="1075 757 1286 945"><p style="text-align: center;">TIMER</p><p style="text-align: center;">REC    OFF    PLAY</p></div>
<p>4. Timer operation Schaltuhrbetrieb Fonctionnement de la minuterie</p>	<ul style="list-style-type: none"><li>● Set the switch-on and switch-off times for recording or playback.</li><li>● Make sure that the power of the connected units is turned off by the timer while keeping the POWER button of this unit set to ON.</li><li>● Die Ein- und Abschaltzeit für Aufnahme oder Wiedergabe voreinstellen.</li><li>● Sicherstellen, daß bei eingeschalteter Netzspannung dieses Geräts die Spannungsversorgung der angeschlossenen Geräte von der Schaltuhr abgeschaltet wird.</li><li>● Régler les durées de marche et d'arrêt pour l'enregistrement ou la lecture.</li><li>● S'assurer que l'alimentation des appareils raccordés est coupée par la minuterie tout en maintenant la touche POWER de cet appareil placée sur ON.</li></ul> <div data-bbox="394 1180 853 1258"><p>● The recording will start at the preset switch-on time. ● Die Aufnahme startet zur voreingestellten Zeit. ● L'enregistrement commencera à l'heure de mise en marche pré réglée.</p></div> <div data-bbox="925 1180 1380 1258"><p>● Playback will start at the preset switch-on time. ● Die Wiedergabe startet zur voreingestellten Zeit. ● La lecture commencera à l'heure de mise en marche pré réglée.</p></div>	

**Notes:**

- Turn the power off after setting tape decks A and B to the stop mode.
- Be sure to set the TIMER knob to OFF after the recording has been performed.
- When the tuner is to be used as an alarm, set the TIMER knob to OFF.
- When the power is switched on again, the SEA circuit is not engaged, regardless of the position of the SEA ON/OFF button.

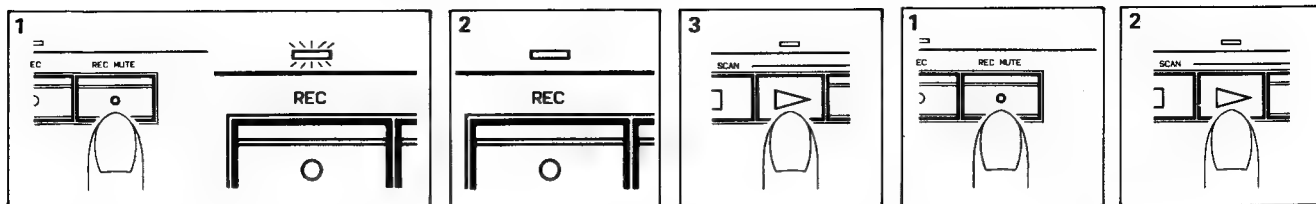
**Hinweise:**

- Deck A und B auf Stop schalten und die Spannungsversorgung abschalten.
- Nach Aufnahme den TIMER-Schalter auf OFF einstellen.
- Soll der Tuner für die Weckfunktion verwendet werden, den TIMER-Schalter auf OFF schalten.
- Bei erneuter Geräteeinschaltung ist die SEA-Klangkompensation ungeachtet der vorherigen Verwendung der SEA ON/OFF-Taste nicht zugeschaltet.

**Remarques:**

- Couper l'alimentation après réglage des platines à cassette A et B en mode d'arrêt.
- S'assurer de placer la commutateur TIMER sur OFF après avoir effectué l'enregistrement.
- Si le syntoniseur est à utiliser comme une alarme, placer le commutateur TIMER sur OFF.
- Quand l'alimentation est remise, le circuit SEA n'est pas engagé, quelle que soit la position de la touche SEA ON/OFF.

## HOW TO USE THE AUTOMATIC RECORD MUTE FUNCTION



By using the REC MUTE (●) button, it is possible to erase an undesired section or create a non-recorded section between songs while recording.

● **To automatically create a non-recorded section of about 4 – 5 seconds.**

— When the non-recorded section is to be created while recording.

1. Press the REC MUTE (●) button and release it. The REC indicator blinks and a non-recorded section is created.
2. After about 4 – 5 seconds, the tape stops automatically and the recording-standby mode is engaged.
3. To start recording again, press the Play button. By pressing the REC MUTE (●) button again while the non-recorded section is being created, the non-recorded section will automatically be extended about 4 – 5 seconds beyond the point at which the REC MUTE button was pressed.

● **To create a non-recorded section of more than 4 – 5 seconds.**

— When the non-recorded section is to be created while recording.

1. Hold the REC MUTE (●) button pressed for as long as the blank section is to be, and then release it. The recording-standby mode is then engaged.
2. To start recording again, press the Play button.

● **To create a non-recorded section of about 4 – 5 seconds before starting recording.**

1. Press the REC MUTE (●) and PAUSE (■) buttons simultaneously and release them.
2. The REC indicator blinks and the tape turns while in the recording mode, thus creating a non-recorded section.
3. After about 4 – 5 seconds, the tape automatically stops and the recording-standby mode is engaged.

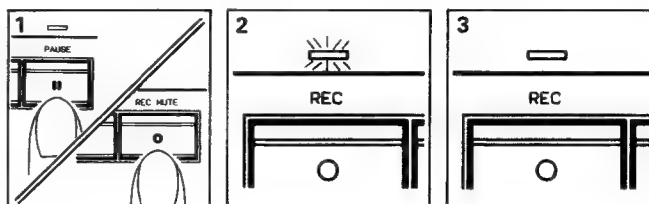
● **To make a non-recorded section of less than 4 – 5 seconds.**

— When the non-recorded section is to be created while recording.

Soon after pressing the REC MUTE (●) button, and before the recording-standby mode is engaged, press the Play button. Recording will begin. Pressing the PAUSE (■) button instead of the Play button sets the deck to recording-standby mode immediately.

**Notes:**

- Setting the record-muting time is easy because the REC indicator blinks after each minute during record muting.

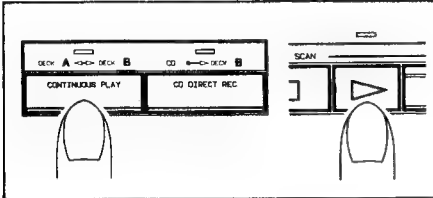


- Do not press the operation buttons of tape deck A during record muting.
- As the remote control unit functions differently, refer to page 27.

- Während der Stummaufnahme keine Cassettenfunktionstaste von Deck A betätigen.
- Da sich die Fernbedienung hiervon in der Funktion unterscheidet, die Angaben von Seite 27 beachten.

- Ne pas appuyer sur les touches de fonctionnement de la platine à cassette A pendant l'enregistrement silencieux.
- Comme le boîtier de télécommande fonctionne différemment, se reporter à la page 27.

#### CONTINUOUS PLAY FUNCTION



After inserting cassettes in tape deck A and B, press the CONTINUOUS PLAY button. Press the Play button of tape deck A or B to start continuous play. For tape deck B, the playback mode can be set using the REVERSE MODE knob.

- When the REVERSE MODE knob is set to "1" (1): (1)

If deck A plays first, it plays in the forward direction to the end of tape, then deck B starts to play in the forward direction. While it is playing, the tape in deck A is rewound. When the end of the tape in deck B is reached, tape A is played again and the tape in deck B is rewound. In this way, playback is continuous.

- When the REVERSE MODE knob is set to "2" (2): (2)

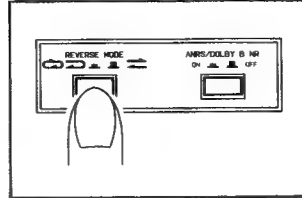
If tape deck A plays first, it plays the forward side of its cassette, and then tape deck B plays both sides of its cassette. After play is finished, tape deck B enters the standby mode with the head reversed for playing the forward side. Following this, tape deck A again plays in the forward direction.

To stop continuous play, press the Stop (□) button of the tape deck which is playing back.

#### Notes:

- The NR mode should be the same setting for tape deck A and B.
- When replacing the cassette, the CONTINUOUS PLAY indicator goes out. Therefore, after replacing it, press the CONTINUOUS PLAY button again so that its indicator lights.

#### KONTINUIERLICHE WIEDERGABE



Nach Einlegen einer Cassette in Deck A und B die CONTINUOUS PLAY-Taste betätigen. Zum Start der kontinuierlichen Wiedergabe die Wiedergabetaste von Deck A oder B betätigen. Für Deck B kann die Wiedergabebetriebsart über den REVERSE MODE-Schalter geregelt werden.

- Bei Position "1" des REVERSE MODE-Schalters: (1)

Schaltet Deck A zuerst auf Wiedergabe, erfolgt diese in Vorwärtsrichtung bis zum Erreichen des Bandendes. Hierauf schaltet Deck B auf Wiedergabe in Vorwärtsrichtung. Währenddessen wird das Band in Deck A rückgespult. Bei Erreichen des Bandendes in Deck B, startet erneut die Wiedergabe von Deck A. Auf diese Weise ist kontinuierliche Wiedergabe möglich.

- Bei Position "2" des REVERSE MODE-Schalters: (2)

Startet die Wiedergabe bei Deck A, wird die Vorwärtsseite abgespielt, hierauf beide Seiten der in Deck B eingelegten Cassette. Hierauf schaltet Deck B auf Betriebsbereitschaft, der Tonkopf ist auf Wiedergabe der Vorwärtsseite eingestellt. Hierauf wird erneut die Deck A-Cassette abgespielt.

Zur Abschaltung der kontinuierlichen Wiedergabe die Stoptaste (□) des gerade auf Wiedergabe geschalteten Geräts betätigen.

#### Hinweise:

- Für Deck A und B die gleiche Rauschunterdrückung verwenden.
- Bei Cassettentausch erlischt die CONTINUOUS PLAY-Anzeige. Daher nach Cassettentausch erneut die CONTINUOUS PLAY-Taste betätigen, so daß die Anzeige leuchtet.

#### FONCTION DE LECTURE CONTINUE

Après mise en place des cassettes dans les platines A et B, appuyer sur la touche CONTINUOUS PLAY. Appuyer sur la touche de lecture de la platine à cassette A ou B pour commencer la lecture continue. Pour la platine B, le mode de lecture peut être réglé en utilisant le commutateur REVERSE MODE.

- Si le commutateur REVERSE MODE est placé sur "1": (1)

Si la platine A lit d'abord, elle lit dans le sens avant jusqu'à la fin de la bande, puis la platine B commence la lecture dans le sens avant. Pendant qu'elle lit, la bande sur la platine A est réébobinée. Quand la fin de la bande sur la platine B est atteinte, la bande A est relue et la bande sur la platine B est réébobinée. Ainsi, la lecture est continue.

- Si le commutateur REVERSE MODE est placé sur "2": (2)

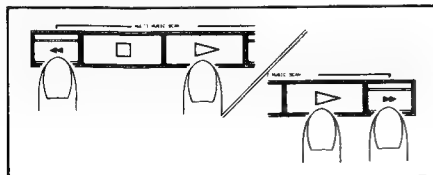
Si la platine à cassette A commence la lecture, elle lit la face avant de sa cassette, et puis la platine B lit les deux faces de sa cassette. Après la lecture, la platine à cassette B entre en mode d'attente avec la tête retournée pour lire la face avant. Après cela, la platine A reprend la lecture dans la direction avant.

Pour arrêter la lecture continue, appuyer sur la touche d'arrêt (□) de la platine qui est en cours de lecture.

#### Remarques:

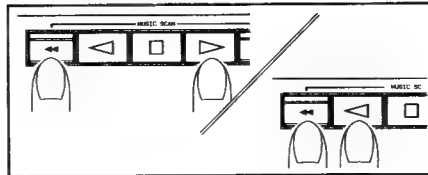
- Le mode de réduction de bruit doit être le même pour les platines à cassette A et B.
- En remplaçant la cassette, l'indicateur CONTINUOUS PLAY s'éteint. Par conséquent, après remplacement, appuyer à nouveau sur la touche CONTINUOUS PLAY pour que l'indicateur s'allume.

#### MUSIC SCANNING FUNCTION



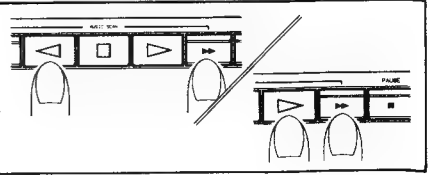
Press the (▶▶) or (◀◀) button together with the Play button.

#### MUSIKSUCHLAUF



Zusammen mit der Wiedergabetaste, Taste (▶▶) oder (◀◀) betätigen.

#### FONCTION DE RECHERCHE MUSICALE



Appuyer sur la touche (▶▶) ou (◀◀) et sur la touche de lecture.

#### • For tape deck A:

When at the beginning of the current selection, press the (▶▶) and Play buttons to scan the next tune and the (◀◀) and Play button to scan the previous tune. When in the middle of a song, pressing (◀◀) and Play buttons scans the current selection.

#### • For tape deck B:

Press the (▶▶) and Play (▶) or (◀) buttons to scan the next selection of the forward or reverse side and the (◀◀) and Play (▶) or (◀) buttons to scan the previous or current selection of the forward or reverse side.

#### Notes:

• When music scanning is performed for tape deck B while tape deck A is played back, tape deck B enters the standby mode. When music scanning is performed for tape deck A while tape deck B is played back, tape deck A enters the standby mode.

• For music scanning, press the Play (▶) or (◀) button while holding the (▶▶) or (◀◀) button pressed.

#### • Deck A:

Bei Bandposition vor einem Titelbeginn wird durch gleichzeitiges Drücken von Wiedergabetaste und Taste (▶▶) bzw. (◀◀) zum jeweils nächsten, bzw. vorhergehenden Titel gespult. Bei Bandposition innerhalb eines Titels kann durch gleichzeitiges Drücken von Wiedergabetaste und (◀◀) Taste zum Anfang dieses Titels gespult werden.

#### • Deck B:

Taste (▶▶) und Wiedergabetaste (▶) oder (◀) gleichzeitig drücken, um zum nächsten Titel bei Vorwärts-/Umkehrrichtung zu spulen. Mit Taste (◀◀) und Wiedergabetaste (▶) oder (◀) kann zum Anfang des vorhergehenden bzw. des gerade jeweiligen Wiedergabetitels gespult werden.

#### Hinweise:

• Erfolgt Musiksuchlauf für Deck B, während die Cassette in Deck A wiedergegeben wird, schaltet Deck B auf Betriebsbereitschaft. Die gilt umgekehrt auch für Deck A.

• Zum Musiksuchlauf die Wiedergabetaste (▶) oder (◀) bei gedrückt gehaltener (◀◀) oder (▶▶) Taste betätigen.

#### • Pour la platine à cassette A:

Juste au début de la sélection en cours, appuyer sur les touches (▶▶) et de lecture pour rechercher le morceau suivant et sur les touches (◀◀) et de lecture pour rechercher le morceau précédent. Au milieu d'un morceau, une pression sur les touches (◀◀) et de lecture permet de rechercher le début de la sélection en cours.

#### • Pour la platine à cassette B:

Appuyer sur les touches (▶▶) et de lecture (▶) ou (◀) pour rechercher la prochaine sélection de la face avant ou opposée et sur les touches (◀◀) et de lecture (▶) ou (◀) pour rechercher la sélection précédente ou courante de la face avant ou opposée.

#### Remarques:

• Quand la recherche musicale est effectuée pour la platine à cassette B alors que la platine A est en lecture, la platine B entre en mode d'attente.

Quand la recherche musicale est effectuée pour la platine à cassette A alors que la platine B est en lecture, la platine A entre dans le mode d'attente.

• Pour la recherche musicale, appuyer sur la touche de lecture (▶) ou (◀) en maintenant la touche (▶▶) ou (◀◀) pressée.

## CASSETTE TAPE

#### • Tape type

The following two types of tape can be used for this unit.

- NORMAL (TYPE I)
- METAL (TYPE IV)

The following tape are available from JVC.

Normal tape (TYPE I)	UFI, FI
Metal tape (TYPE IV)	ME-PH

#### Note:

• Using a Chrome (TYPE II) or Ferri-chrome tape is not recommended because this unit does not have the required characteristics.

## CASSETTENBAND

#### • Bandsorte

Die folgenden beiden Bandsorten können für dieses Gerät verwendet werden.

- NORMAL (TYPE I)
- METAL (TYPE IV)

JVC bietet folgende Bandsorten an.

Normalband (TYPE I)	UFI, FI
Metallband (TYPE IV)	ME-PH

#### Hinweis:

• Die Verwendung von Chrom-(TYPE II) oder Ferrichrombändern wird nicht empfohlen, da dieses Gerät nicht die erforderliche Voreinstellung durchführen kann.

## CASSETTE

#### • Type de bande

Les deux types de bandes suivants peuvent être utilisés pour cet appareil.

- NORMAL (TYPE I)
- METAL (TYPE IV)

Les bandes suivantes sont disponibles chez JVC.

Bande normale (TYPE I)	UFI, FI
Bande métal (TYPE IV)	ME-PH

#### Remarque:

• L'utilisation d'une bande Chrome (TYPE II) ou Ferri-chrome n'est pas conseillée parce que l'appareil n'a pas les caractéristiques exigées.

## MAINTENANCE

#### Head cleaning

Head cleaning is required to assure optimum performance. The heads which come into contact with the tape attract minute particles of dust and become dirty.

If the heads are dirty .....

- Sound quality becomes poor.
- The sound level drops.
- Recording becomes impossible.
- Sound is interrupted.
- Previous recordings are not erased.

Because of this, keep the heads clean.

## WARTUNG

#### Kopfreinigung

Um eine optimale Leistung zu gewährleisten, müssen die Köpfe regelmäßig gereinigt werden. Durch den Kontakt mit dem Band sammeln sich auf den Köpfen Staubpartikel an.

Wenn die Köpfe schmutzig sind ...

- Verschlechtert sich die Klangqualität.
- Verringert sich die Lautstärke.
- Ist Aufnehmen nicht mehr möglich.
- Wird der Ton unterbrochen.
- Werden bei Neuenaufnahmen die alten Aufnahmen nicht vollständig gelöscht.

Aus diesen Gründen müssen die Köpfe sauber gehalten werden.

## ENTRETIEN

#### Nettoyage des têtes

Le nettoyage des têtes est nécessaire pour garantir de bonnes performances. Les têtes en contact avec la bande retiennent de minuscules particules de poussière et se salissent.

Si les têtes sont sales .....

- La qualité sonore est mauvaise.
- Le niveau sonore baisse.
- L'enregistrement devient impossible.
- Le son est interrompu.
- Les enregistrements précédents ne sont pas effacés.

A cause de ces conséquences, garder les têtes propres.

Wipe the heads with a cleaning stick or cloth moistened with alcohol (not too much).

#### Notes:

- Do not bring any iron object, magnet screw-driver, etc. close to the heads.
- Do not use force so the right head positions are kept.
- Make sure to turn the power off when cleaning.

#### Cleaning the pinch roller and capstan

Wipe the pinch roller and capstan referring to "Head cleaning".

#### Demagnetizing

If the heads become magnetized, noise will occur and high frequency response will deteriorate. In this case, set the POWER button to OFF and demagnetize the heads with a head demagnetizer. For more details, refer to the instruction book of the demagnetizer.

Die Köpfe mit einem Wattestäbchen oder einem Tuch, das mit wenig Alkohol befeuchtet wurde, reinigen.

#### Hinweise:

- Keine Gegenstände aus Eisen, magnetische Schraubenzieher usw. in die Nähe der Köpfe bringen.
- Nicht zu stark drücken, um die Positionen der Köpfe nicht zu verändern.
- Vor der Reinigung das Gerät ausschalten.

#### Reinigung der Andruckrolle und der Tonwelle

Die Andruckrollen und Tonwellen auf die gleiche Weise wie die Köpfe reinigen, siehe "Kopfreinigung".

#### Entmagnetisierung

Wenn die Köpfe magnetisiert sind, treten Störgeräusche auf und die hohen Frequenzen werden schlechter. In diesem Fall das Gerät ausschalten und die Köpfe mit einem Tonkopf-Entmagnetisierer entmagnetisieren. Für genaue Einzelheiten siehe die Bedienungsanleitung des Entmagnetisierers.

Essuyer les têtes avec un coton-tige ou un chiffon imbibé d'alcool (en petite quantité).

#### Remarques:

- Ne pas approcher d'objet en fer, de tournevis magnétisé etc. des têtes.
- Ne pas utiliser la force pour que la position des têtes ne soit pas modifiée.
- Bien couper l'alimentation lors du nettoyage.

#### Nettoyage du galet presseur et du cabestan

Les essuyer en vous référant à "Nettoyage des têtes".

#### Démagnétisation

Si les têtes se magnétisent, du bruit se produira et la réponse des hautes fréquences se détériorera. Dans ce cas, mettre l'interrupteur POWER sur OFF et démagnétiser les têtes avec un démagnétiseur de tête. Pour plus de détails, se référer à son manuel d'instructions.

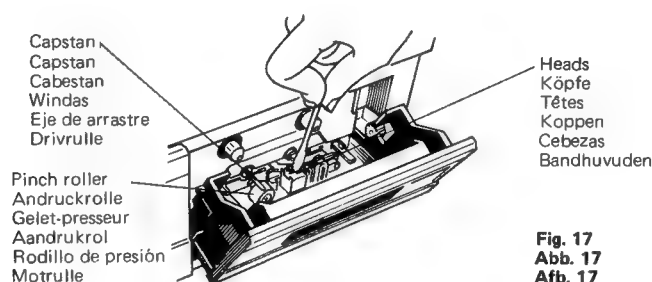


Fig. 17  
Abb. 17  
Afb. 17

## TROUBLESHOOTING

What appears to be a malfunction may not always be serious.

Make sure first ....

**Recording is impossible.**

Is the protective tab broken?

— Seal the hole with adhesive tape.

**Tuner sensitivity is reduced**

Is the antenna cord unattached?

— Connect it correctly, referring to page 5.

**Synchro recording with the CD player is not possible**

Is the remote cable disconnected?

— Connect it correctly, referring to page 6.

#### Notes:

- Incorrect indications may be displayed if the POWER button is pressed to ON (—) immediately after being pressed to OFF (■). This is because this unit uses a microprocessor, and POWER OFF processing for each section is performed for about one second after the power is turned off. For correct indicator display, press the POWER button to OFF (■), wait more than three seconds, then press it to ON (—).
- When the POWER button is pressed to ON, a mechanical noise may be heard. This is due to the cassette mechanism's automatic status-checking procedure and is not a malfunction.

Was wie eine Fehlfunktion erscheint, muß nicht immer ernsthaft sein.

Überprüfen Sie zuerst ....

**Aufnahme ist nicht möglich**

Ist die Aufnahmeschutzzunge herausgebrochen?

— Die Öffnung mit einem Klebeband verschließen.

**Verminderte Empfindlichkeit**

Ist das Antennenkabel nicht angeschlossen?

— Wie erforderlich anschließen, siehe Seite 5.

**Synchro-Aufnahme mit dem CD-Player ist nicht möglich.**

Ist das Fernbedienkabel nicht angeschlossen?

— Wie erforderlich anschließen, siehe Seite 6.

#### Hinweise:

- Wenn das Gerät unmittelbar nach Abschaltung (POWER-Taste OFF ■) wieder eingeschaltet wird (POWER-Taste ON —), sind möglicherweise die Anzeigen nicht korrekt. Da das Gerät mit Mikroprozessortechnologie arbeitet, ist nach Abschaltung der Gerätespannungsversorgung die Abschaltung der einzelnen Abschnitte um ca. eine Sekunde verzögert. Um korrekte Anzeigen zu erzielen, das Gerät abschalten (POWER-Taste OFF ■) und bis zum Wiedereinschalten (POWER-Taste ON —) ca. 3 Sekunden warten.
- Wenn mit der POWER-Taste eingeschaltet wird, tritt ein mechanisches Geräusch auf. Dies rührt von der automatischen Statusüberprüfung des Cassettenlaufwerks her und ist keine Fehlfunktion.

## EN CAS DE DIFFICULTÉ

Ce qui semble au départ être un mauvais fonctionnement n'est pas toujours très sérieux.

Assurez-vous d'abord que ....

**L'enregistrement est impossible.**

La languette de sécurité est-elle brisée?

— Reboucher le trou avec de l'adhésif.

**La sensibilité du syntoniseur est réduite**

Le cordon de l'antenne est-il détaché?

— Le raccorder correctement, se reportant à la page 5.

**L'enregistrement synchro avec le lecteur de disque audionumérique n'est pas possible**

Le câble de télécommande est-il débranché?

— Le raccorder correctement, se reportant à la page 6.

#### Remarques:

- Des indications incorrectes peuvent être affichées si la touche POWER est enfoncée sur ON (—) immédiatement après avoir été pressée sur OFF (■). Cet appareil utilise un micro-processeur, et le traitement de la coupure d'alimentation pour chaque section est effectué environ une seconde après que l'alimentation soit coupée. Pour l'affichage d'indications correctes, presser la touche POWER sur OFF (■), attendre plus de trois secondes, puis la presser sur ON (—).
- Quand la touche POWER est pressée sur ON, un bruit mécanique peut se faire entendre. C'est à cause de la procédure de contrôle d'état automatique du mécanisme de cassette et ce n'est pas un défaut de fonctionnement.



## SPECIFICATIONS

### AMPLIFIER SECTION

Output power : 40 watts per channel, min.  
RMS, both channels driven,  
into 8 ohms at 1 kHz with no  
more than 0.9 % total har-  
monic distortion.

Input sensitivity/impedance

PHONO : 3 mV/47 kohms  
CD : 500 mV/47 kohms  
VIDEO/AUX : 300 mV/47 kohms  
VCR/DAT : 300 mV, 47 kohms

Recording output : 150 mV

S.E.A. graphic equalizer

Center frequencies: 63 Hz, 250 Hz, 1 kHz,  
4 kHz, 16 kHz

Control range : +10 dB  $\pm$  1 dB,  
-10 dB  $\pm$  1 dB

### FM TUNER SECTION

Tuning range : 87.5 MHz — 108.0 MHz

Usable sensitivity : 0.95  $\mu$ V/75 ohms  
1.5  $\mu$ V/75 ohms (DIN)

Signal to noise ratio : Mono 80 dB (A-net)  
Stereo 73 dB (A-net)  
Mono 72 dB (DIN)  
Stereo 64 dB (DIN)

Stereo separation : 40 dB at 1 kHz,  
35 dB at 1 kHz (DIN)

### AM TUNER SECTION

#### MW

Channel space : 522 kHz — 1629 kHz  
9 kHz

Channel space : 530 kHz — 1630 kHz  
10 kHz

Sensitivity : 300  $\mu$ V/m (at 1000 kHz  
or 999 kHz)

#### LW (DR-E500LBK only)

Tuning range : 144 kHz — 353 kHz  
144 kHz — 290 kHz  
(for Italy only)  
Sensitivity : 600  $\mu$ V/m (at 245 kHz)

### CASSETTE SECTION

Head Deck A : Metaperm (play)  
Deck B : Metaperm (play/rec)  
Ferrite (erase)

Frequency response : Normal tape: 30 Hz —  
17 kHz (-20 dB rec/play)  
Metal tape: 30 Hz —  
18 kHz (-20 dB rec/play)

Wow and flutter : 0.08 % (WRMS),  
0.14 % (CCIR WTD)

Signal to noise ratio : 57 dB (metal tape)

### GENERAL

Dimensions : 360 (W) x 283 (H) x  
309 (D) mm  
(14-3/16" x 11-3/16"  
x 12-3/16")

Weight : 7.8 kg (17.2 lbs)

Design and specifications subject to change  
without notice.

## TECHNISCHE DATEN

### VERSTÄRKERTEIL

Ausgangsleistung : 40 Watt pro Kanal, min.:  
eff., beide Kanäle an 8  
Ohm bei 1 kHz, bei  
Klirrfaktor nicht über  
0,9 %.

Eingangsempfindlichkeit/Impedanz

PHONO : 3 mV/47 kOhm  
CD : 500 mV/47 kOhm  
VIDEO/AUX : 300 mV/47 kOhm  
VCR/DAT : 300 mV, 47 kOhm

Aufnahmeausgang : 150 mV

S.E.A. Graphic Equalizer

Mittenfrequenzen : 63 Hz, 250 Hz, 1 kHz,  
4 kHz, 16 kHz

Regelbereich : +10 dB  $\pm$  1 dB,  
-10 dB  $\pm$  1 dB

### UKW-TUNERTEIL

Abstimmbereich : 87,5 MHz — 108,0 MHz

Nutzbare Empfind-  
lichkeit : 0,95  $\mu$ V/75 Ohm,  
1,5  $\mu$ V/75 Ohm (DIN)

Störspannungs-  
abstand : Mono 80 dB  
(A-Netzwerk)  
Stereo 73 dB  
(A-Netzwerk)

Mono 72 dB (DIN)  
Stereo 64 dB (DIN)

Stereokanal-  
trennung : 40 dB bei 1 kHz,  
35 dB bei 1 kHz (DIN)

### AM-TUNERTEIL

#### MW

Abstimmbereich

Kanalabstand : 522 kHz — 1629 kHz  
9 kHz

Kanalabstand : 530 kHz — 1630 kHz  
10 kHz

Empfindlichkeit : 300  $\mu$ V/m (bei 1000 kHz  
oder 999 kHz)

#### LW (nur DR-E500LBK)

Abstimmbereich : 144 kHz — 353 kHz  
144 kHz — 290 kHz  
(nur Italien)

Empfindlichkeit : 600  $\mu$ V/m (bei 245 kHz)

### CASSETTE TEIL

Kopf Deck A : Metaperm (Wiedergabe)  
Deck B : Metaperm (Wiedergabe/  
Aufnahme)  
Ferrit (Löschen)

Frequenzgang : Normalband: 30 Hz —  
17 kHz (-20 dB Aufn./  
Wiederg.)  
Metallband: 30 Hz —  
18 kHz (-20 dB Aufn./  
Wiederg.)

Gleichlaufschwän-  
gungen : 0,08 % (WRMS),  
0,14 % (CCIR WTD)

Störspannungsab-  
stand : 57 dB (Metallband)

### ALLGEMEIN

Abmessungen : 360 (B) x 283 (H) x  
309 (T) mm

Gewicht : 7,8 kg

Technische Änderungen vorbehalten.

## CARACTERISTIQUES TECHNIQUES

### SECTION AMPLIFICATEUR

Puissance de sortie : 40 watts par canal, min.  
RMS, les deux canaux  
commandés, sur 8 ohms à  
1 kHz avec pas plus de  
0,9 % de distortion  
harmonique totale.

Sensibilité d'entrée/impédance

PHONO : 3 mV/47 kohms  
CD : 500 mV/47 kohms  
VIDEO/AUX : 300 mV/47 kohms  
VCR/DAT : 300 mV, 47 kohms

Sortie d'enregistre-  
ment : 150 mV

Egaliseur graphique S.E.A.

Fréquences : 63 Hz, 250 Hz, 1 kHz,  
centrales 4 kHz, 16 kHz

Gamme de : +10 dB  $\pm$  1 dB  
commande -10 dB  $\pm$  1 dB

### SECTION SYNTONISEUR FM

Gamme d'accord : 87,5 MHz — 108,0 MHz

Sensibilité utilisable : 0,95  $\mu$ V/75 ohms,  
1,5  $\mu$ V/75 ohms (DIN)

Rapport signal/bruit : Mono 80 dB (réseau A)  
Stéréo 73 dB (réseau A)  
Mono 72 dB (DIN)  
Stéréo 64 dB (DIN)

Séparation stéréo : 40 dB à 1 kHz, 35 dB à  
1 kHz (DIN)

### SECTION SYNTONISEUR AM

#### PO

Gamme d'accord

Espacement de : 522 kHz — 1629 kHz  
canal 9 kHz

Espacement de : 530 kHz — 1630 kHz  
canal 10 kHz

Sensibilité : 300  $\mu$ V/m (à 1000 kHz ou  
999 kHz)

#### GO (DR-E500LBK seulement)

Gamme d'accord : 144 kHz — 353 kHz  
144 kHz — 290 kHz  
(pour l'Italie seulement)

Sensibilité : 600  $\mu$ V/m (à 245 kHz)

### SECTION CASSETTE

Tête Platine A : Métaperm (lecture)  
Platine B : Métaperm (lecture/  
enregistrement)

Ferrite (effacement)

Réponse en : Bande normale: 30 Hz —  
fréquence 17 kHz (-20 dB  
enregistrement/lecture)  
Bande Métal: 30 Hz —  
18 kHz (-20 dB  
enregistrement/lecture)

Pleurage et : 0,08 % (WRMS), 0,14 %  
scintillement (CCIR WTD)

Rapport signal/bruit : 57 dB (bande métal)

### GENERALES

Dimensions : 360 (L) x 283 (H) x  
309 (P) mm

Poids : 7,8 kg

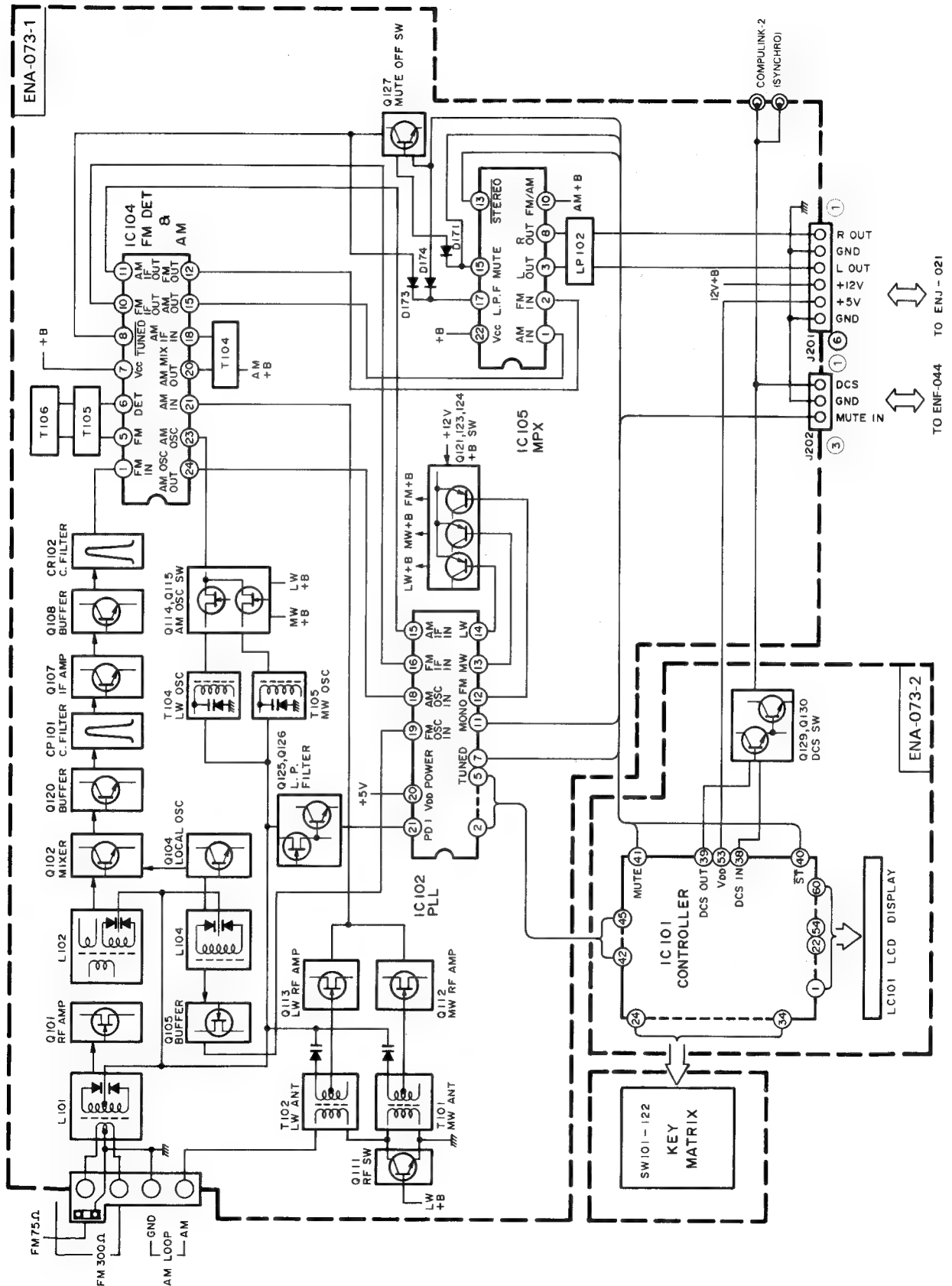
Présentation et caractéristiques modifiables sans  
préavis.

### POWER SPECIFICATIONS

Areas	Line Voltage & Frequency	Power Consumption
UK.	AC 240 V $\sim$ , 50 Hz	240 watts
Australia		
Continental Europe	AC 220 V $\sim$ , 50 Hz	120 watts
Other Areas	AC 110/120/220/240 V $\sim$ , selectable, 50/60 Hz	

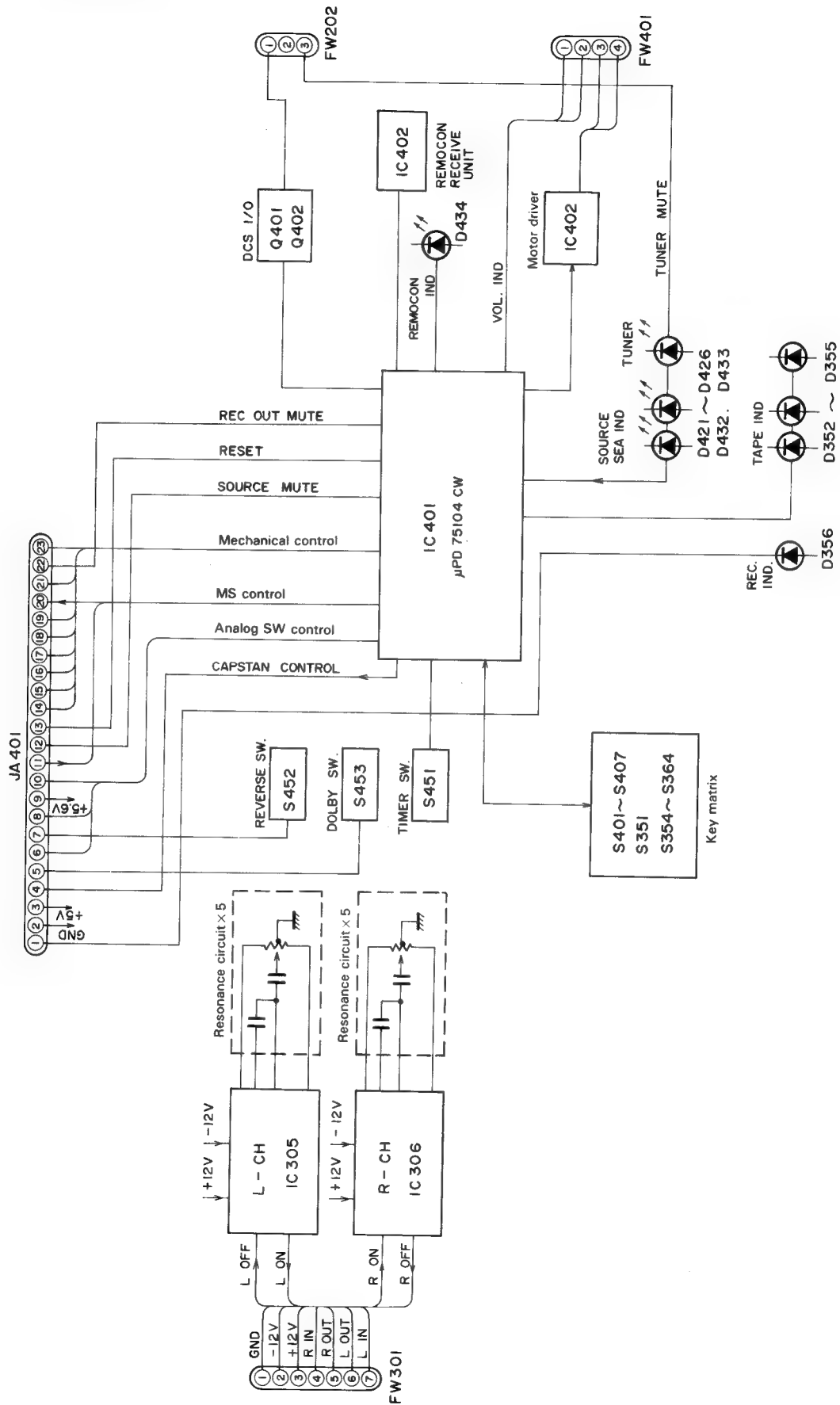
# Block Diagram

## ■ Tuner Section





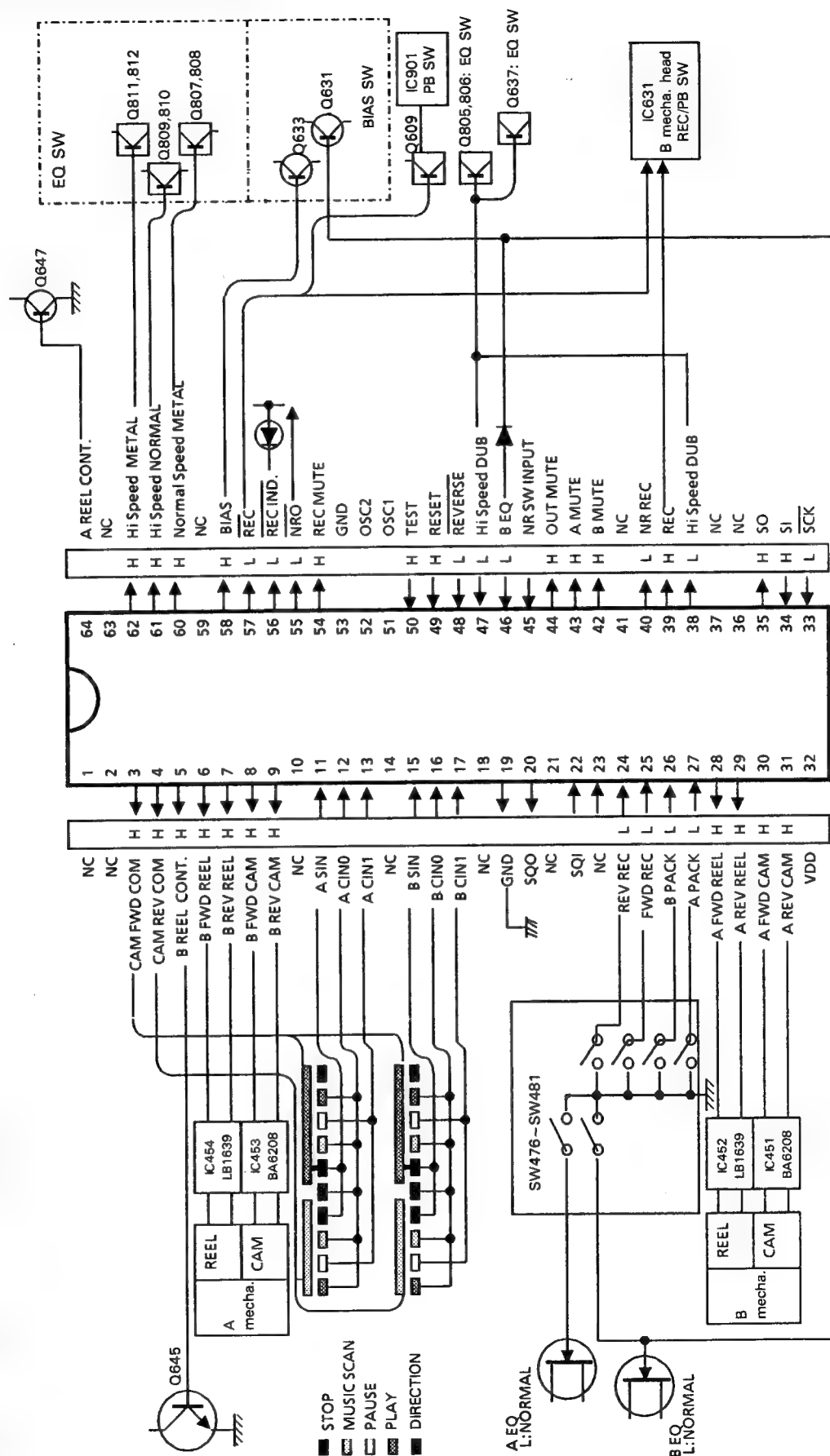
■ System Control Section



# Technical Explanation

## ■ IC651 : HD614022SH87

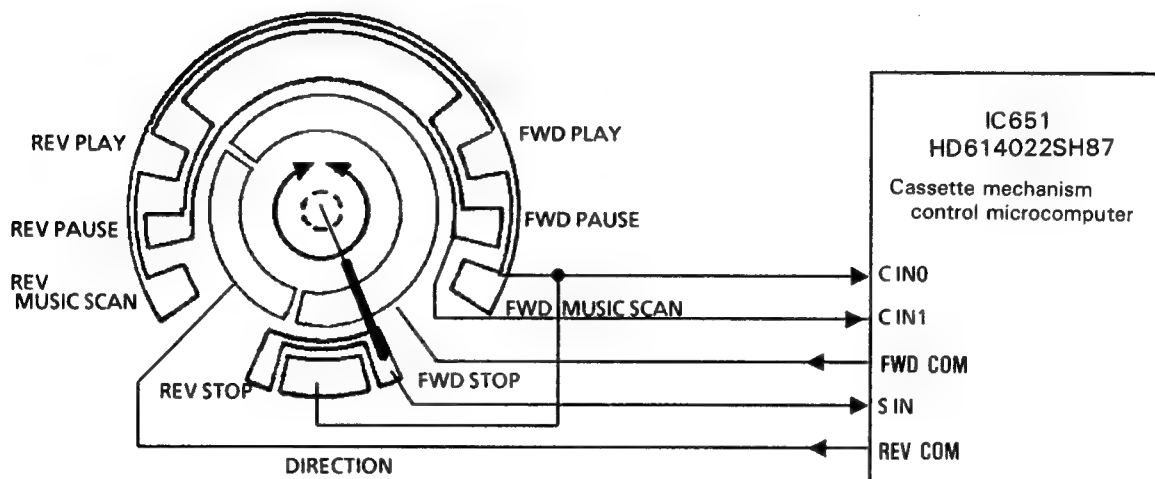
Cassette mechanism control microcomputer



## ■ Cam Switch

This cam switch provides mechanical information corresponding to the operation mode of the mechanism. As can be seen from the diagram below, this switch has FWD COM and REV COM as output lines and SIN, CIN0, and CIN1 as receiving lines.

This table shows how the position data for the switch is output in one of 6 ways for the 14 position data items.



### • Cam switch operation

The cam switch, in mechanical mode, informs the microcomputer of the head position.

- 1) With the power turned on, the microcomputer checks if the mechanism is in the STOP position. If the mechanism is not in the STOP position, the cam motor revolves and stops at the FWD or REV STOP position.
- 2) The microcomputer makes this STOP position the standard and detects other positions relative to this standard. CIN0 and CIN1 are therefore arranged alternately. Pulses generated each time the contact point is passed is added or subtracted to obtain data on the current position.
- 3) The head and pinch roller operates by this motor. However, at the DIRECTION position, the cam changes the head direction mechanically.

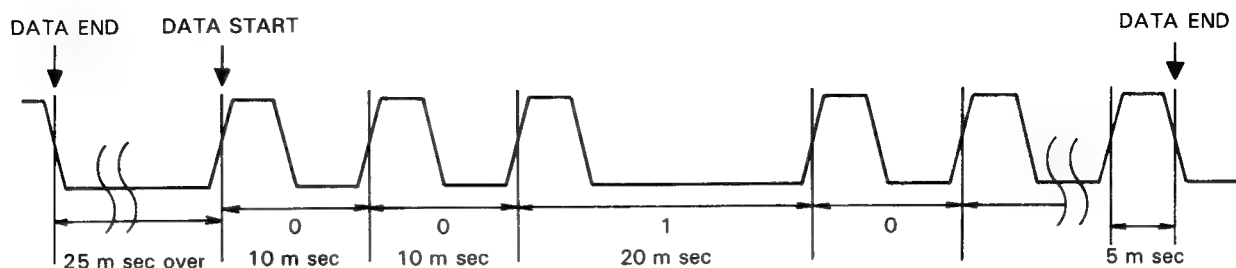
### • System microcomputer and mechanical control operation

There is a close connection between the system microcomputer and mechanical control. (The basic clock operates separately.) In order for the system microcomputer to be informed of the mechanical mode, mechanical data is constantly obtained from the mechanical control microcomputer. Thus, if the mechanics is not working properly, the system microcomputer's functioning will stop.

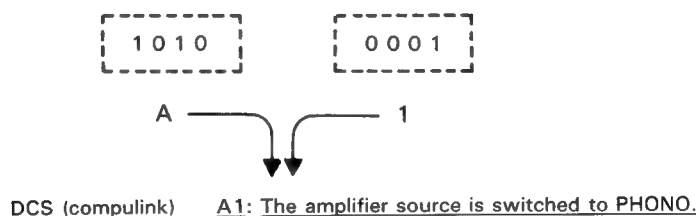
The mechanical control microcomputer receives control data from the system microcomputer, operates the mechanics, and controls the deck's amplifier system. Particularly important is the cam position data input. This comes from the cam switch operated by the cam motor.

- **Synchro (compulink) data**

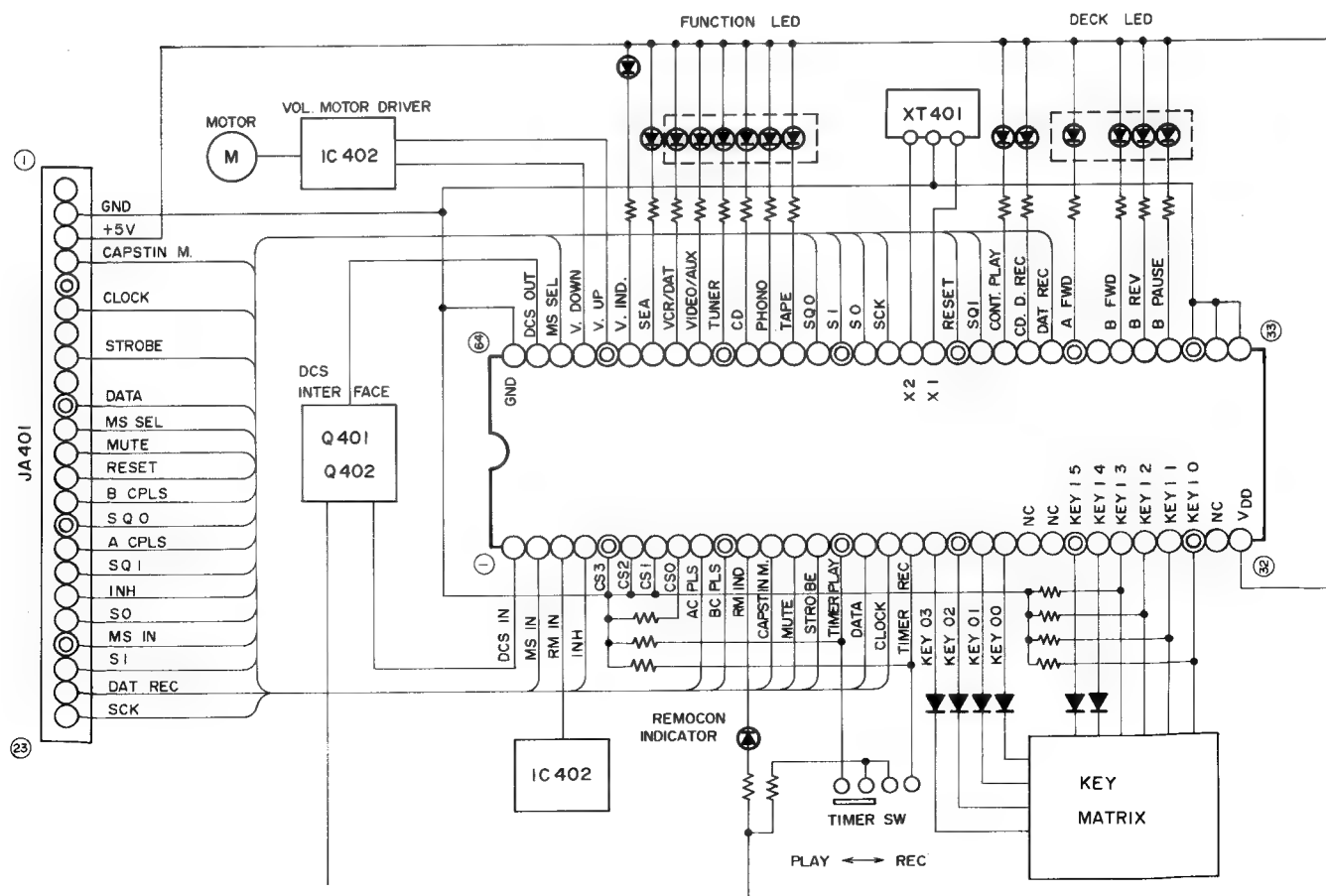
The synchro (compulink) data has the following specifications.



- 1) DATA START occupies an interval of 25 m sec or longer starting from the last transition of the immediately-preceding DATA END.
- 2) Data 0: 10 m sec  
Data 1: 20 m sec
- 3) DATA END is the last transition of the ninth pulse.
- 4) With 8 bits as one data, the data code comprises the first and last four bits of hexadecimal, double digits.



- **System Control Microcomputer (IC401:  $\mu$ PD75104CW-129)**

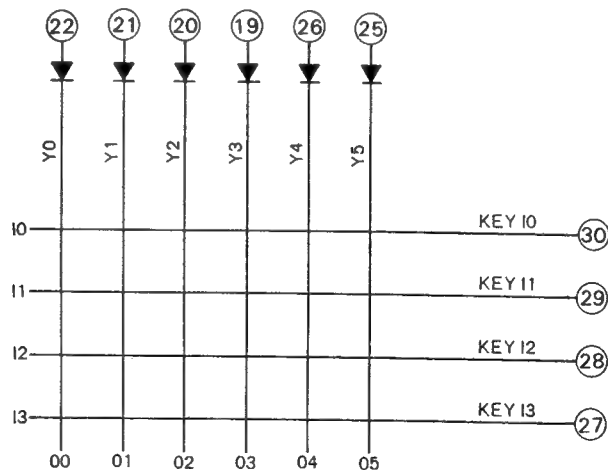




IC401:  $\mu$  PD75104CW-129

Pin No.	Name	I/O	Function	Active	Pin No.	Name	I/O	Function	Active
1	DCS IN	I	DCS INPUT PORT	L	33	---	-	Non use.	L
2	MS IN	I	MUSIC SCAN IN	L	34	---	-	Non use.	L
3	RM IN	I	REMOTE CONTROL INPUT PORT	H	35	---	-	Non use.	L
4	INH	I	POWER OFF INPUT	L	36	B PAUSE IND	O	B PAUSE INDICATOR	L
5	CS3	I	CHIP SELECT	H	37	B REV IND	O	B REVERSE INDICATOR	L
6	CS2	I	CHIP SELECT	L	38	B FWD IND	O	B FORWARD INDICATOR	L
7	CS1	I	CHIP SELECT	H	39	---	-	Non use.	L
8	CS0	I	CHIP SELECT	L	40	A FWD IND	O	A FORWARD INDICATOR	L
9	A CPLS	I	A-COUNT PULSE INPUT	H	41	DAT REC	O	DAT REC MUTE	H
10	B CPLS	I	B-COUNT PULSE INPUT	H	42	CD D.REC IND	O	CD DIRECT REC INDICATOR	L
11	RM IND	O	REMOTE CONTROL INDICATOR	L	43	CONT.PLAY IND	O	CONTINUOUS PLAY INDICATOR	L
12	CAPSTAN M.	O	CAPSTAN MOTOR CONTROL	L	44	SRQ	I	SRQ1 (from MECHA.CONTROL)	L
13	MUTING OFF	O	MUTING OFF OUTPUT	H	45	RESET	I	RESET INPUT PORT	H
14	STB	O	STORBE (ANALOG SWITCH)	H	46	X1	-	CLOCK INPUT (4.19 MHz)	-
15	TIMER PLAY	O	TIMER PLAY (H: ON)	L	47	X2	-	CLOCK INPUT (4.19 MHz)	-
16	DATA	O	DATA (ANALOG SWITCH)	H	48	SCK	O	SCK (for MECHA.CONTROL)	L
17	CLOCK	O	CLOCK (ANALOG SWITCH)	H	49	SO	O	SO (for MECHA.CONTROL)	H
18	TIMER REC	O	TIMER REC (H: ON)	L	50	SI	I	SI (for MECHA.CONTROL)	H
19	KEY 03	O	KEY OUTPUT 3	H	51	SPQT	O	SRQ0 (for MECHA.CONTROL)	L
20	KEY 02	O	KEY OUTPUT 2	H	52	TAPE IND	O	TAPE INDICATOR	L
21	KEY 01	O	KEY OUTPUT 1	H	53	PHONO IND	O	PHONO INDICATOR	L
22	KEY 00	O	KEY OUTPUT 0	H	54	CD IND	O	CD INDICATOR	L
23	NC	-	Non connection.	-	55	TUNER IND	O	TUNER INDICATOR	L
24	NC	-	Non connection.	-	56	AUX IND	O	AUX INDICATOR	L
25	KEY 05	O	KEY OUTPUT 5	H	57	DAT IND	O	DAT INDICATOR	L
26	KEY 04	O	KEY OUTPUT 4	H	58	SEA IND	O	SEA INDICATOR	L
27	KEY 13	I	KEY INPUT 3	H	59	VOL IND	O	VOLUME INDICATOR	H
28	KEY 12	I	KEY INPUT 2	H	60	VOL UP	O	VOLUME UP	L
29	KEY 11	I	KEY INPUT 1	H	61	VOL DOWN	O	VOLUME DOWN	L
30	KEY 10	I	KEY INPUT 0	H	62	MS SEL	O	MUSIC SCAN SELECT	H
31	NC	-	Non connection.	-	63	DCS OUT	O	DCS OUTPUT PORT	L
32	Vdd	-	VDD (+5V)	-	64	GND	-	GROUND	-

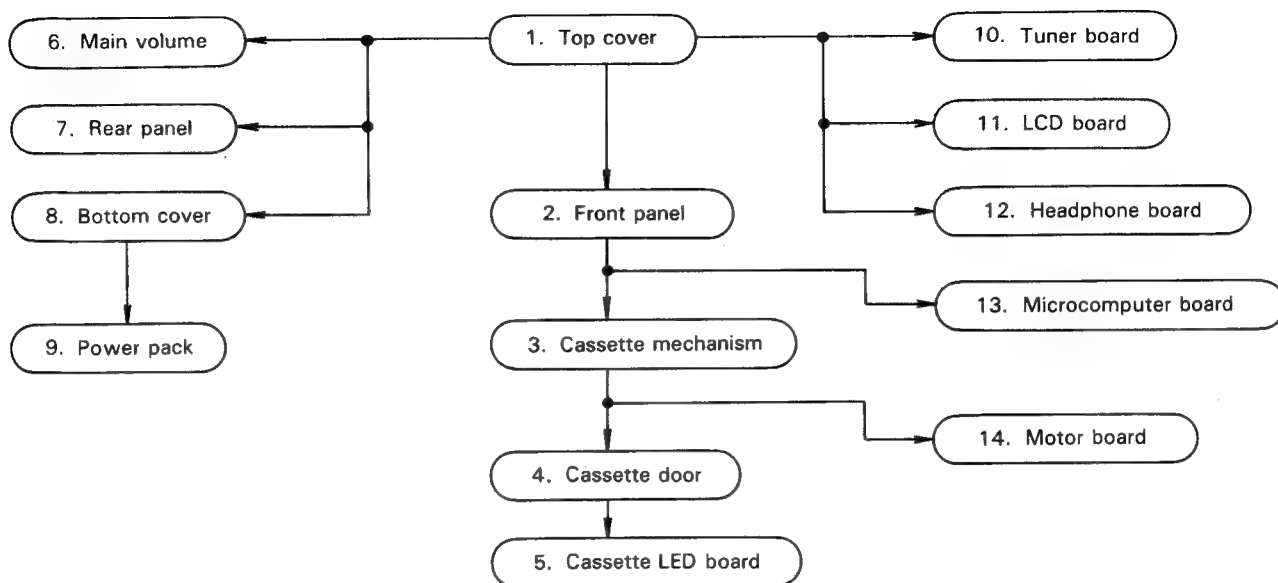
## ■ The control key for matrix



Pin No.	Pin No. in out	22 00	21 01	20 02	19 03	26 04	25 05
30	10	▶▶ (A)	▶▶ (B)	■ (B)	CONT PLAY	VIDEO/AUX	TAPE
29	11	▶ (A)	▶ (B)	■ (A)	A▶▶B	VCR/DAT	TUNER
28	12		◀ (B)	■	CD DIRECT REC		CD
27	13	◀◀ (A)	◀◀ (B)	⊙	⊙	SEA ON/OFF	PHONO

# Removal Procedures

Since this machine is assembled in a particular order, when removing parts, follow this flow chart.



## 1. Top cover removal

- (1) Remove the three screws (six in total) on either side of the deck receiver.
- (2) Remove the four screws on the back, then lift up the back of the top cover.

## 2. Front panel removal

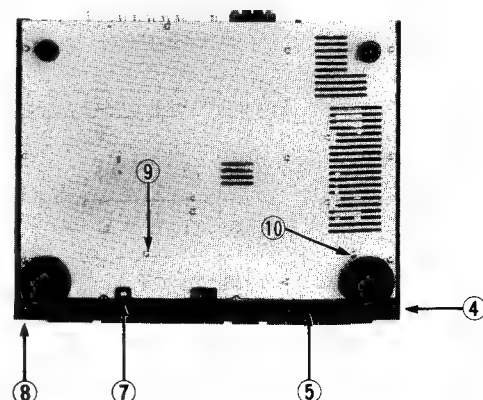
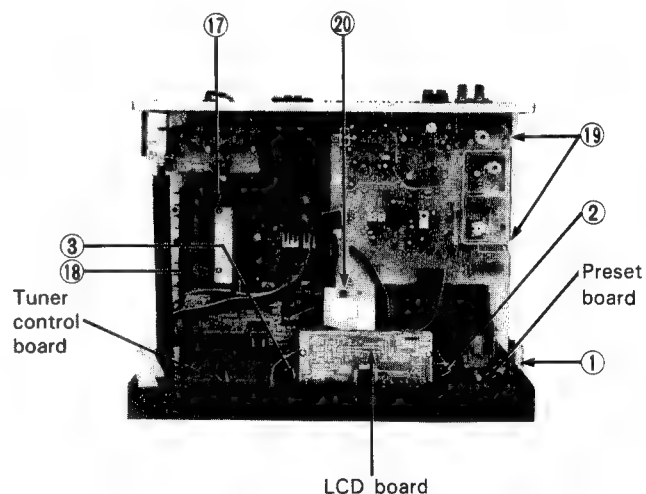
- (1) Remove the screw ① on the right side panel.
- (2) Remove the two screws ② and ③ fixing the LCD board bracket to the front panel.
- (3) Remove the preset board and the tuner control board from the front panel's hooks.
- (4) Disconnect the connectors from the audio board and the tuner board.
- (5) Remove the six screws ④~⑥ at the bottom of panel.

## 3. Cassette mechanism removal

- (1) Remove the counter belt.
- (2) Remove the four screws ⑪~⑭ holding the top part of the mechanism.
- (3) Remove the two screws ⑮ and ⑯ holding the lower part of the mechanism.

## 4. Cassette door removal

- (1) Disconnect the cassette spring from the cassette bracket.
- (2) Remove the screw holding the damper unit and then remove the damper unit.
- (3) Remove the screws holding the cassette brackets and then remove the cassette bracket.



## 5. Cassette LED board removal

- (1) Remove the two cassette brackets.
- (2) Remove the cassette LED board from the front panel's hooks.

## 6. Main volume removal

- (1) Pull off the main volume knob, then pull out the LED holder inside the main volume knob.
- (2) Remove the nut fixing the main volume.

Note: Be careful not to cut the thin wires connecting the LED.

## 7. Rear panel removal

- (1) Remove the twelve screws holding the rear panel from the rear side.
- (2) Remove the screws holding the rear panel.

## 8. Bottom cover removal

- (1) Remove the sixteen screws holding the bottom cover.

## 9. Power pack removal

- (1) Remove the two screws ⑰ and ⑱ holding the heat-sink bracket.
- (2) Unsolder the power pack connections.

## 10. Tuner board removal

- (1) Remove the two screws ⑲ holding the tuner board.
- (2) Pull off the plastic rivet ⑳ holding the tuner board.
- (3) Remove the three screws holding the tuner board from the rear panel.

## 11. LCD board removal

- (1) Remove the two screws holding the LCD board.

## 12. Headphone board removal

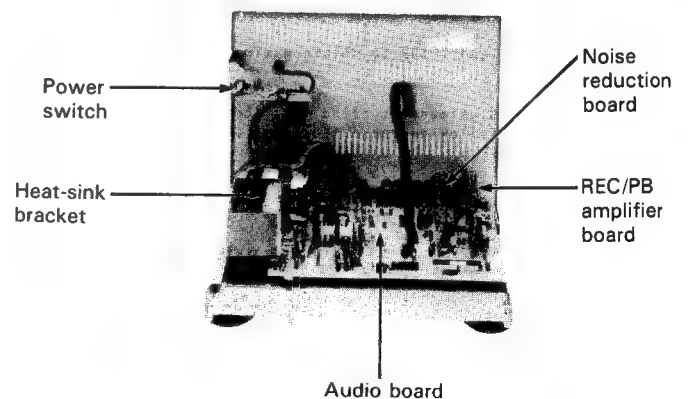
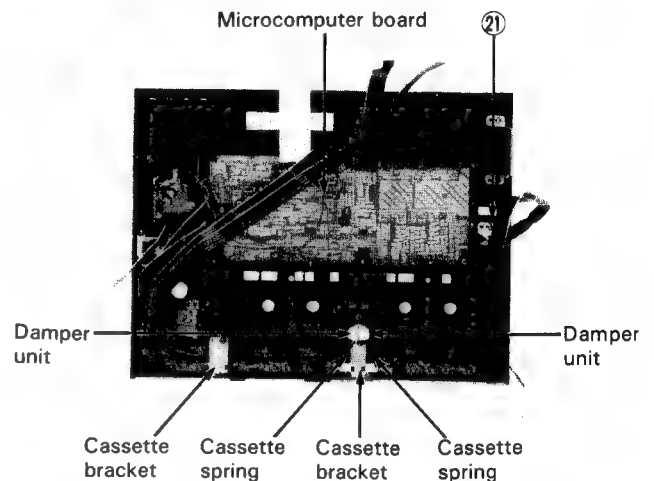
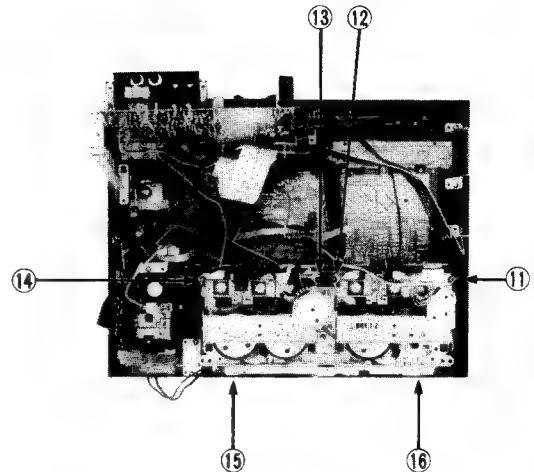
- (1) Remove the screw ㉑ holding the headphone jack bracket.

## 13. Microcomputer board removal

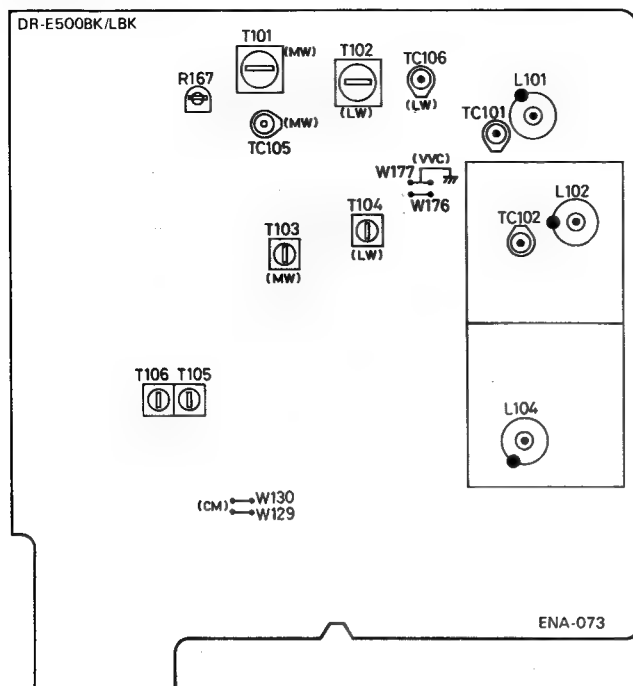
- (1) Remove the nine screws holding the microcomputer board.

## 14. Motor board removal

- (1) Remove the six screws holding the motor board.
- (2) Unsolder the motor board connections.



# FM/MW/LW Tuner Alignment Procedures



## 3-(1) Front-end Section

FM oscillator coil : L104

1. Set the frequency display to "108.0 MHz" and the FM MODE switch to "MONO" position.
2. Confirm that there is noise with no input signal.
3. Adjust L104 so that the output of test point "W176 and W177" becomes  $8.3 \text{ V} \pm 0.1 \text{ V}$ .
4. Set the frequency display to "87.5 MHz" and confirm that the output of test point "W176 and W177" is  $1.9 \text{ V} \pm 0.5 \text{ V}$ .

FM antenna coil : L101, L102

5. Adjust L101 and L102 to obtain maximum sensitivity at 89.9 MHz.

FM antenna trimmer : TC101, TC102

6. Adjust TC101 and TC102 to obtain maximum sensitivity at 105.9 MHz.

Note : After adjustment, confirm that the "Band Cover" is in the following range (for West Germany only).

Lower edge : 87.5 MHz (+ 0 kHz, -300 kHz)  
Higher edge : 108.0 MHz (+500kHz, - 0 kHz)

## 3-(2) IF, Detection and MPX

FM detector coil : T105, T106

1. Connect a center-meter or a digital voltmeter to test point "W129 and W130", and tune to a 100.1 MHz signal (1kHz modulation, 75kHz or 40kHz deviation) with SSG ATT 70dB.
2. Adjust T105 so that the center-meter indicates "0" or the digital voltmeter reads 0 mV.
3. At the same time, adjust T106 so that the distortion of the audio output is minimized.

Stereo Separation : R167 (for Continental Europe, West Germany, Italy and the U.K.)

1. Tune to a 98.1 MHz stereo signal.
2. Adjust R167 so that the channel separation becomes maximum.

## 3-(3) LW Section (for Europe only)

LW oscillator coil : T104

1. Set the frequency display to 144 kHz.
2. Adjust T104 to obtain 0.8 V at test point "W176 and W177".
3. Set the frequency display to 353 kHz and confirm that the output of test point "W176 and W177" is  $7.7 \text{ V} \pm 0.5 \text{ V}$ .

In case of Italy

1. Set the frequency display to 144 kHz.
2. Adjust T104 to obtain 1.0 V at test point "W176 and W177".
3. Set the frequency display to 290 kHz and confirm that the output of test point "W176 and W177" is  $5.2 \text{ V} \pm 0.3 \text{ V}$ .

LW antenna coil : T102

4. Connect a loop antenna to the "AM LOOP" terminal on the rear panel.
5. Adjust T102 to obtain the best reception sensitivity at 164 kHz.

LW antenna trimmer : TC106

6. Adjust TC106 to obtain the best receiving sensitivity on 353 kHz.

In case of Italy

6. Adjust TC106 to obtain the best reception sensitivity at 245 kHz.

## 3-(4) MW Section

Note : ( ) ; 9 kHz step, [ ] : 10 kHz step

MW oscillator coil : T103

1. Set the frequency display to (522 kHz) [530 kHz] and confirm that the output of test point "W176 and W177" is  $(0.9 \text{ V} \pm 0.2 \text{ V})$  [0.9 V  $\pm$  0.2 V].
2. Set the frequency display to (1629 kHz) [1630 kHz or 1710 kHz] and confirm that the output of test point "W176 and W177" is  $(7.5 \text{ V} \pm 0.8 \text{ V})$  [7.5 V  $\pm$  0.8 V or 8.0 V  $\pm$  0.8 V].

In case of Saudi Arabia and Italy

1. Set the frequency display to 531 kHz and confirm that the output of test point "W176 and W177" is  $1.2 \text{ V} \pm 0.35 \text{ V}$ .
2. Set the frequency display to 1602 kHz and confirm that the output of test point "W176 and W177" is  $7.2 \text{ V} \pm 0.7 \text{ V}$ .

3. If its output is over 9 V at [1710 kHz], adjust T103 to obtain [9.0 V].

MW antenna coil : T101

4. Connect a loop antenna to the "AM LOOP" terminal on the rear panel.
5. Adjust T101 to obtain the best reception sensitivity at (603 kHz) [600 kHz].

MW antenna trimmer : TC105

6. Adjust TC105 to obtain the best reception sensitivity at (1404 kHz) [1400 kHz].

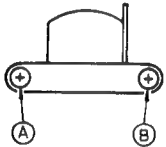
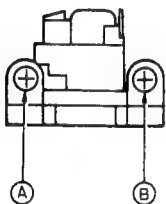
# Cassette Deck Adjustment Procedures

## (1) Measuring instruments necessary for Adjustment

- |   |   |
|---|---|
| 1. Low frequency oscillator (Output of 0 db should be obtained at the 600 ohm terminal at a frequency of 50Hz ~ 20kHz.) | TMT-6237 (for music scanning)<br>TMT-6247 (for music scanning)                                  |
| 2. Attenuator (600 ohm impedance)   | 5. Recording standard tapes   |
| 3. Electronic voltmeter   | TS-5 (SF), TS-7 (METAL) or equivalent. (Use the standard tape specified by JVC Audio Division.) |
| 4. Standard tapes   | 6. 600-ohm impedance (for attenuator matching)  |
| VTT-703L (for head azimuth adjustment)  | 7. Distortion factor meter (bandpass filter)  |
| VTT-712 (for tape speed, wow & flutter)   | 8. Torque gauge : CTG-N (cassette type)   |
| VTT-724 (standard level)  | 9. C-120 tape (for checking the tape running)   |
| VTT-738 (for playback frequency response)   |   |

## (2) Adjustment and repairing the mechanism

(Adjust and check the mechanism before adjusting the electric circuit)

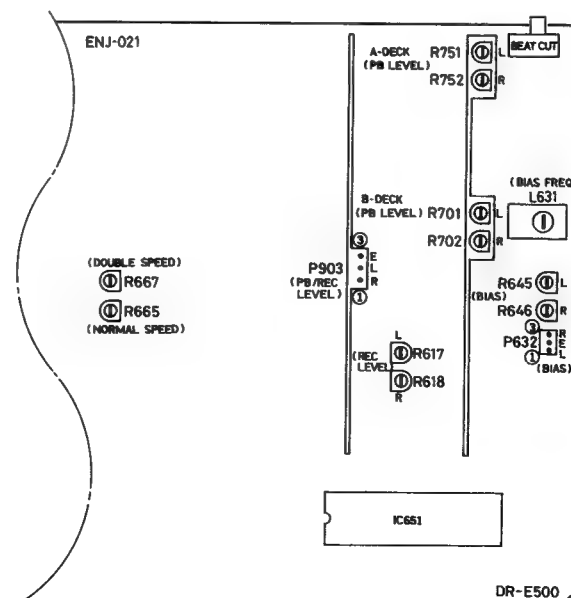
Item	Adjustment method	Standard value	Remarks
Adjusting azimuth of rec/play head	1. Connect the output from the SPK OUT terminal to the voltmeter. (At about 1 volt.) 2. Play back VTT-703L.		1) When the specified characteristic cannot be obtained because of head wear, cut wire, excessive magnetization, etc., replace the head and adjust the head azimuth. Also, perform the adjustment of the playback level, recording bias current, recording level, etc.  2) When there is the difference of more than 3 ~ 4 dB between left and right output levels, replace the head to avoid complaints.
A mechanism 	3. Adjust screw A so that the output of the voltmeter becomes maximum when PLAY (▶) is pressed.	Maximum	
	4. Paint screws A and B with screw locking compound so they do not come loose after adjustment.		
	5. Adjust screw A so that the output of the voltmeter becomes maximum when PLAY (▶) is pressed.	Maximum	
B mechanism 	6. Adjust screw B so that the output of the voltmeter becomes maximum when PLAY (◀) is pressed.	Maximum	
	7. Paint screws A and B with screw locking compound so they do not come loose after adjustment.		
Playback torque	Measure the torque in the playback mode using the torque measurement cassette CTG-N.	35 ~ 75 g-cm	When the standard torque cannot be obtained, clean or replace the take-up disc assembly.
Fast forward torque	Measure the torque in the fast forward mode by the same procedure.	More than 80 g-cm	When the standard torque cannot be obtained, 1) Clean the capstan belt, rim of the fly-wheel, motor pulley, etc. 2) Change the belt, idler, etc.
Rewind torque	Measure the torque in the rewind mode by the same procedure.	More than 80 g-cm	When the standard torque cannot be obtained, clean the motor pulley, capstan, rim of the fly-wheel, rim of the supply reel disc, etc.
Wow & flutter	Play back VTT-712 and attach the wow & flutter meter to the SPK OUT terminals of this unit; its reading should be within 0.15 % (WRMS).		As a complaint may occur if the wow & flutter fluctuates by 0.1 % even though it is allowed in the standard, repairing is required.

### (3) Adjustment of the electric circuit

1. Perform the following adjustment after the head azimuth adjustment.
2. The adjustment procedure should be performed basically in order described below.
3. Perform with the NR switch set to OFF and the BEAT CUT switch set to "1".
4. Be sure to adjust parts marked \* when the head is replaced.

Item	Adjustment method	Standard value	Remarks
Motor speed	1. Playback VTT-712 and set the function to TAPE and connect the electronic counter to the SPK OUT terminals.		If an electronic counter is built into the wow & flutter meter, just connect it to the INPUT.
	2. Normal speed adjustment (be sure to perform this first.) 1) Play back using mechanism A and adjust it so that 3,000 Hz is obtained by turning semi-fixed resistor R665 on the cassette amplifier P.C.B.	3,000 Hz	
	3. Double speed adjustment 1) Play back using mechanism A for double speed dubbing, and adjust it so that 6,000 Hz is obtained by turning semi-fixed resistor R667 on the cassette amplifier P.C.B.	6,000 Hz	Load a tape that can be used for recording in mechanism B.
*1. Playback level	Play back VTT-724 (1kHz) with the tape selector set to NORM and adjust so that the output ③--②(L) and ③--①(R) of P903 is -3 dbs. A deck : R751(L), R752(R) B deck : R701(L), R702(R)	-3dbs	Adjust the playback level when replacing the head because it may change. In this case, the impedance of the voltmeter should be more than 100 kohm.
*2. Recording amplifier gain	1. Input a -8 dbs (1kHz) signal to the AUX terminals, set the function switch to AUX then set mechanism B to the recording mode. 2. Check that the output ③--②(L) and ③--①(R) of P903 is -3 dbs.	-3dbs $\pm$ 1dB	
*3. Recording bias frequency	Connect a frequency counter between ① and ② of P632, and play back a metal tape. Adjustment point : L631	105kHz $\pm$ 5kHz	
*4. Recording frequency response	Record 1 kHz by inputting first -20 dB from the AUX terminals with the NR switch set to OFF and then 100 Hz/10 kHz. Adjust R645 and R646 so that the deviation of output of 100 Hz/10 kHz to the output of 1 kHz satisfies the standard value when the tape is played back. (Basically, adjust them so that the output at 1 kHz and 10 kHz is the same.) R645: L-ch, R646: R-ch	By making 1kHz the standard, 0 $\pm$ 3 dB should be obtained at 100 Hz and 0 $\pm$ 2 dB should be obtained at 10 kHz.	1) Basically adjust the recording/playback frequency characteristics of the cassette deck using the bias adjustment. This is because it is more dependent on the bias current than as open reel deck. 2) Adjust with a normal tape; when a metal tape is used, the value should be within the specified range.
Note: After performing the recording level adjustment in item 5, check the recording/playback frequency characteristics with the NR switch set to ON. In this case, the fine adjustment should be done again if 1 kHz/10 kHz difference is more than 0 $\pm$ 4 dB.			

Item	Adjustment method	Standard value	Remarks
*5. Recording level	1. Apply an input of 1 kHz (-8 db) to the AUX terminals and record it on left and right channels using normal tape. 2. When playing it back, adjust the recording signal current so that the output ③--② (L) and ③--① (R) of P903 is -3 db. Adjustment points: R617(L), R618(R)	-3db $\pm$ 1dB	Adjust with a normal tape; when using a metal tape, check that the level difference is within 1.5 dB and the level difference of left and right is within 1.0 dB.
*6. Check the recording/playback distortion	1. Record a signal of 1 kHz (-8 db) input from the AUX terminals. 2. Check that the output of this signal when played back satisfies the standard value using the distortion meter.	Less than 2 % for normal tape or metal tape.	Perform after adjusting the bias current and recording level.
7. Check the recording/playback S/N ratio	1. Record a 1 kHz (-8 db) signal input from the AUX terminals and no signal by removing the input in the middle of recording. (Use the REC MUTE button.) 2. Play back this recorded signal; the ratio of the 0 dB recording output and no signal recording output measured by the voltmeter should satisfy the standard value.	More than 42 dB for normal tape or metal tape	
8. Check erasing	1. Record a signal of 1 kHz (0 db) input from the AUX terminals. 2. Rewind the tape and erase part of the recording. 3. Measure the output ratio of the recorded part and erased part.	More than 65 dB	For measurement, connect the B.P.F. (bandpass filter) between the deck and the electronic voltmeter. Check with a metal tape.
9. Check auto stop	Check that the tape does not automatically stop near the end of rewinding. (The clearance between the magnet and Hall IC should be within $0.5 \pm 0.3$ mm.)		
10. Check music scanning	1. The music scanning should function at the end of winding in FF SCAN and at the beginning of the winding in REW SCAN using TMT-6247. 2. Music scanning should not function when the TMT-6237 is used.		



# Servicing the Audio P.C. Board

There are small PC Boards(module PC Boards) installed vertically on the audio amplifier PC Board.

- 1) EQ.(Equalizer) PC Board (ENJ-004)
- 2) NR.(Noise Reduction) PC Board (ENJ-011)

(1) Check each terminal before changing parts on the module PC Boards.

## 1.EQ.PC Board (ENJ-004)

Details of defect	Check item	Check point
When recording is impossible (in any mode)	Is the power supplied?	P801⑦⑧
	Is recording bias applied?	P801⑤⑥
	Is the recording signal present?	P801⑥⑩
When the recording/ playback frequency characteristics are defective	Are the playback frequency characteri- stics normal?	to playback module
	Is the recording equalizer switch input normal?	P701①②③④
When playback is impossible	Is the power supplied?	P701⑦⑧
	Is the head wire cut?	P701②③④⑤
	Is there any output?	P701⑤⑥⑨⑩
When the playback frequency character- istics are defective	Is the playback equalizer switch input normal?	P701④⑪⑫

## 2.NR.PC Board (ENJ-011)

Details of defect	Check item	Check point
When recording is impossible	Is the recording signal present?	P902⑥⑦
	Is there any output?	P902④⑤

## 2.NR.PC Board (ENJ-011)

Details of defect	Check item	Check point
When recording is impossible	Is REC selection normal?	P902③
When playback is impossible	Is the power supplied?	P901⑫,P902①
	Is the playback signal present?	P901⑤⑦⑧⑨
	Is A/B signal selection normal?	P901 ⑩⑪
	Is REC selection normal?	P901④,P902③
	Is there any output?	P901 ①②
When music scanning is impossible	Is the playback signal present?	P901⑤⑦⑧⑨
	Is music scan selection normal?	P901 ⑤
	Is there any output?	P901 ③
When NR is not effective	Is NH control normal?	P902②
When ALC is not effective	Is ALC inhibit control normal?	P902⑨
When monitoring is impossible in the dubbing mode	Is the playback signal present?	P901⑧⑨
	Is REC control normal?	P901④
	Is there any output?	P901①②

(2) Locate the probable defect and module from the above check. The following shows the use of semiconductors on the PC Boards.

## 1.EQ.PC Board (ENJ-004)

Use	L	R	Remarks
Signal amplifier	Q801,Q803	Q802,Q804	2SC458(D)
High speed normal EQ switch	Q809	Q810	2SC1685(Q,R)
High speed metal EQ switch	Q811	Q812	2SC1685(Q,R)
Low speed normal EQ switch	Q805	Q806	2SC1685(Q,R)
Low speed metal EQ switch	Q807	Q808	2SC1685(Q,R)
Signal amplifier B/A mechanism	1C701,1C702	1C701,1C702	M51522L
B mechanism metal EQ switch	Q701	Q702	2SK301(P,Q)
A mechanism metal EQ switch	Q751	Q752	2SK301(P,Q)

Use	L	R	Remarks
A mechanism double- speed EQ switch	Q753	Q754	2SK301(P,Q)

## 2.NR.PC Board (ENJ-011)

Use	L	R	Remarks
Deck A/B signal selection	Q901,Q903	Q902,Q904	2SD1302(S,T)
Deck A signal ampli- fier	1C901	1C901	M5218L
Dubbing and music scanning selection	1C902	1C902	TC4053BP
ALC	Q905,Q907, Q909	Q906,Q908, Q910	2SC1740(R,S)
ALC inhibit	Q911	-----	2SC1740(R,S)
REC/PB NR	1C903	1C904	AN7363N



(3) The condition of the input/output and control as a single PC Board is shown below.

1.EQ.PC Board (recording amplifier section: ENJ-004-1)

Pin No.	Pin function	Remarks
1	High speed normal EQ	Electronic switch input 5 V
2	High speed metal EQ	Electronic switch input 5 V
3	Low speed normal EQ	Electronic switch input 5 V
4	Low speed metal EQ	Electronic switch input 5 V
5	R channel signal output	
6	L channel signal output	+12 V
7	+B	
8	L channel signal input	
9	GND	
10	R channel signal input	

Gain

Control		①, ②, ③, ④ Open	5V for only ①	5V for only ②	5V for only ③	5V for only ④
in ④ out ⑤	100 Hz	-8.7dB ± 1.5dB	-8.5dB ± 1.5dB	-5.1dB ± 1.5dB	-9.7dB ± 1.5dB	-5.1dB ± 1.5dB
	1 kHz	-9.7dB ± 1.5dB	-9.5dB ± 1.5dB	-6.1dB ± 1.5dB	-9.6dB ± 1.5dB	-6.0dB ± 1.5dB
	10 kHz	-8.6dB ± 1.5dB	-7.5dB ± 1.5dB	-2.6dB ± 1.5dB	-2.8dB ± 1.5dB	-3.0dB ± 1.5dB
in ③ out ⑥	100 Hz	-8.7dB ± 1.5dB	-8.5dB ± 1.5dB	-5.1dB ± 1.5dB	-9.7dB ± 1.5dB	-5.1dB ± 1.5dB
	1 kHz	-9.7dB ± 1.5dB	-9.5dB ± 1.5dB	-6.1dB ± 1.5dB	-9.6dB ± 1.5dB	-6.0dB ± 1.5dB
	10 kHz	-8.6dB ± 1.5dB	-7.5dB ± 1.5dB	-2.6dB ± 1.5dB	-2.8dB ± 1.5dB	-3.0dB ± 1.5dB

Notes: (1) 10 kohms should be inserted in series for the signal source of the input terminals.

(2) The standard output voltage should be -20dbs and the load impedance of the output terminals should be 1 kohm.

2.EQ.PC Board (playback amplifier section: ENJ-004-2)

Pin No.	Pin function	Remarks
1	GND	For B mechanism input
2	R channel head input for mechanism B	
3	L channel head input for mechanism B	
4	Normal EQ for mechanism B	Electronic switch input (GND short-circuited)
5	R channel EQ output for mechanism B	
6	L channel EQ output for mechanism B	For power supply +12 V
7	GND	
8	+B	
9	R channel EQ output for mechanism A	
10	L channel EQ output for mechanism A	
11	Low speed EQ for mechanism A	Electronic switch input (GND short-circuited)
12	Normal EQ for mechanism A	
13	R channel head input for mechanism A	Electronic switch input (GND short-circuited)
14	L channel head input for mechanism A	
15	GND	For A mechanism input

Gain

Control		①, ② Open	① Open, ② GND	① GND, ② Open	①, ② GND
in ③ out ④	100 Hz	57.0dB ± 2dB	----	----	----
	1 kHz	39.0dB ± 2dB	----	----	----
	10 kHz	27.0dB ± 2dB	31.0dB ± 2dB	32.0dB ± 2dB	37.0dB ± 2dB
in ④ out ⑤	100 Hz	57.0dB ± 2dB	----	----	----
	1 kHz	39.0dB ± 2dB	----	----	----
	10 kHz	27.0dB ± 2dB	31.0dB ± 2dB	32.0dB ± 2dB	37.0dB ± 2dB

Control		④ Open	④ GND
in ② out ⑤	100 Hz	57.0dB ± 2dB	----
	1 kHz	40.0dB ± 2dB	----
	10 kHz	32.0dB ± 2dB	37.0dB ± 2dB
in ③ out ⑥	100 Hz	57.0dB ± 2dB	----
	1 kHz	40.0dB ± 2dB	----
	10 kHz	32.0dB ± 2dB	37.0dB ± 2dB

Notes: (1) The standard output voltage should be -20dbs and the load impedance of the output terminals should be 10 kohms.

(2) The control for adjustment should be preset to the center.

\* Reference value .... the variable range of the control for adjustment is about 11 dB.

### 3.NR.PC Board (ENJ-011)

#### P901

Pin No.	Function name	Remarks
1	MON OUT L	Playback output
2	MON OUT R	Playback output
3	MS OUT	Music scanning signal output
4	REC SW	Record mode with +B short-circuited
5	MS SW	B mechanism with +B short-circuited
6	B IN R	B mechanism playback input(1 kHz)
7	B IN L	B mechanism playback input(1 kHz)
8	A IN L	A mechanism playback input(400 Hz)
9	A IN R	A mechanism playback input(400 Hz)
10	A MUTE	A muting with +B short-circuited
11	B MUTE	B muting with +B short-circuited
12	+B	+12 V
13	GND	Earth

#### P902

Pin No.	Function name	Remarks
1	+B	+12 V
2	NR SW	NR OFF with GND short-circuited
3	NR REC SW	REC with GND short-circuited
4	REC OUT L	Recording output
5	REC OUT R	Recording output
6	REC IN L	Recording input(1 kHz)
7	REC IN R	Recording input(1 kHz)
8	GND	Earth
9	REC MUTE	ALC OFF with +B short-circuited

#### Gain

Mode	Measurement point		Gain	Remarks
1	Output	L P901① P902④	Input of P901⑥ and ⑦ 24.0 ± 2dB	Output of 1 kHz (Check output of P901③.)
		R P901② P902⑤		
2	Output	L P901① P902④	Input of P901⑥ and ⑧ 24.0 ± 2dB	Output of 400 Hz (Check output of P901③.)
		R P901② P902⑤		
3	Output	L P902④	Input of P901⑥ and ⑦ 14.0 ± 2dB	Output of 1 kHz
		R P902⑤		
4	Output	L P901①	Input of P901⑥ and ⑧ 24.0 ± 2dB	Output of 400 Hz
		R P901②		

Note: The standard output voltage should be -20dbs and the load impedance of the output terminals should be 22 kohms.

#### Mode setting

Mode	A MUTE	B MUTE	REC SW	MS SW	NR REC SW	REC MUTE	NR SW
	P901①	P901①	P901④	P901⑤	P902③	P902③	P902②
1 (B playback)	+B	GND	GND	+B	OPEN	+B	GND
2 (A playback)	GND	+B	+B	GND	GND	+B	GND
3(A/B playback)	GND	+B	+B	GND	GND	+B	GND
4 ALC	GND	+B	+B	GND	GND	GND	GND
5 (DUBBING)	GND	+B	+B	GND	OPEN	+B	OPEN
6 (NR ON)	GND	+B	+B	GND	OPEN	+B	OPEN

# Trouble shooting (1)

Refer to the following before repairing this unit.

## 1. The tuner block is independent.

6-core flat wire J201 provides the power supply of +12V, -12V (only lamp), GND and +5V, outputs L and R signals and transfers the control by the DCS line and muting signal.

The DCS outputs the source switching command when the tuner key is pressed and reads the tuner key data output from the remote control unit (converted to the DCS code by the system control microcomputer).

When repairing other sections, it is better to remove the tuner block for easier repairing and checking the power supply.

Note: As the chassis ground (earth) of this unit is done via the tuner P.C.B., it should be performed from other sections using a crocodile clip, etc. When the tuner block is removed.

## 2. The system microcomputer is closely related to the mechanism control microcomputer.

The system microcomputer accepts mechanism information from the mechanism control microcomputer to control the condition of the mechanism. Therefore, if the mechanism is not normal, the system microcomputer stops.

The mechanism microcomputer allows the mechanism to function by the control data from the system microcomputer to control the deck amplifier system.

The most important function is the cam motor control and the cam position data input.

Refer to the description in the previous item.

The system microcomputer has a source input, the deck's key input, DCS input and remote control unit input and controls the serial data supplied to the source select LSI, the serial data to the mechanism control microcomputer and the DCS serial data as well as the source display, mechanism condition display, capstan motor, muting and motor-driven main volume control, etc.

## 3. The deck mechanism is a single reverse mechanism with mechanism A (playback only) and B (recording/playback).

This mechanism is the same as the previous one. The switches related to the mechanism, the motor (reel, cam) and the motor drive circuit are installed in the mechanism section and connected by the five sockets; J455 (8P), J456 (6P), J457 (4P), J458 (10P), J603 (4P).

If this is removed, the mechanism control microcomputer and the system microcomputer do not work.

Note: The ground (earth) of the deck mechanism section is performed via the bottom plate. Therefore, the chassis should be grounded with a crocodile clip, etc. when checking the operation (specially, checking signal lines) with the bottom plate removed. This unit does not function without a tape loaded because combined detection is performed.

## 4. Microcomputer procedure when the power is supplied.

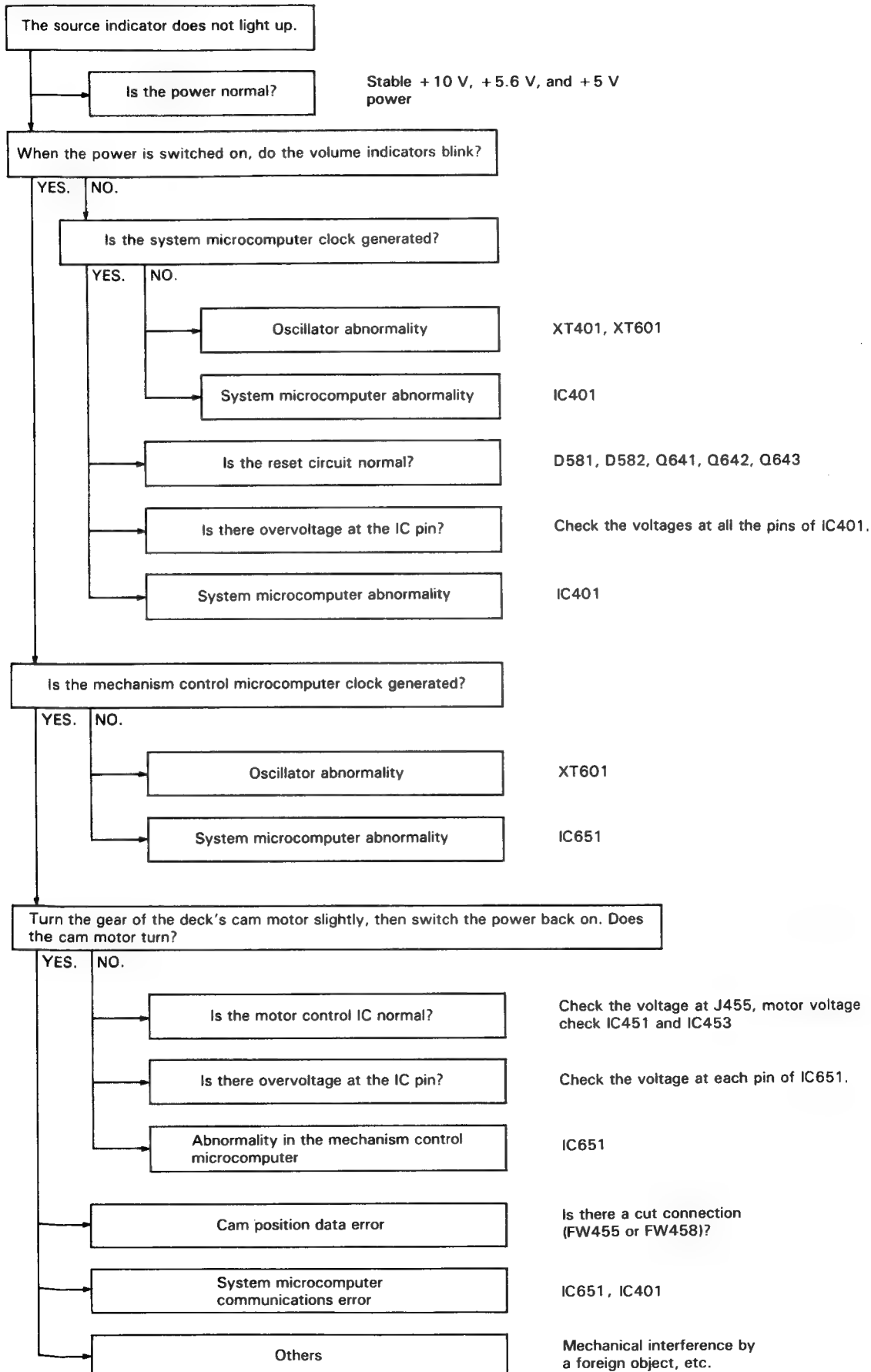
The system microcomputer is closely related to the mechanism control microcomputer as described above, but the basic clock functions independently.

When the power is switched on, the mechanism control microcomputer initializes the mechanism and waits for a command from the system microcomputer. The system microcomputer lights the motor-driven volume indicator and then transmits a signal to check the mechanism control microcomputer; if it is OK, the system microcomputer indicates the source and condition of the mechanism.

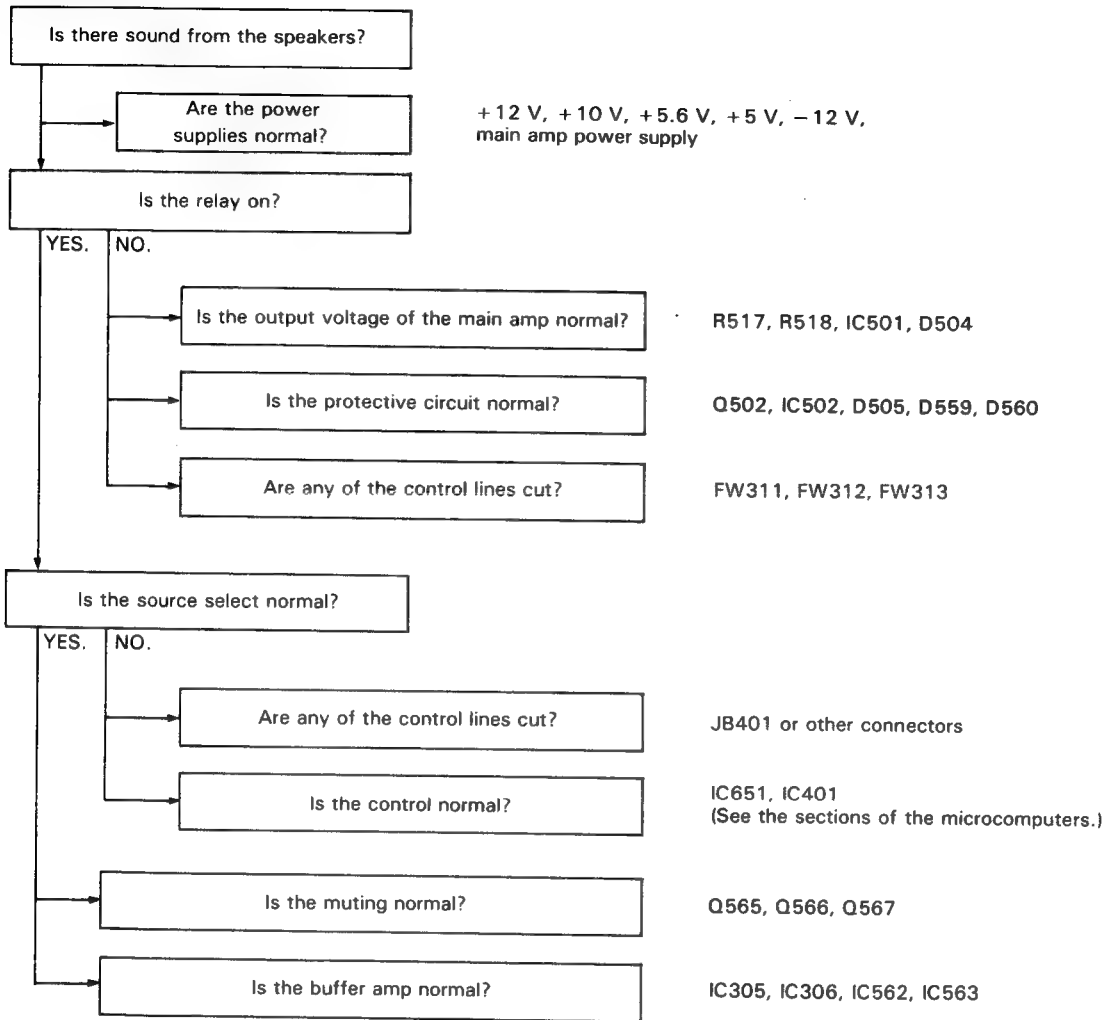
After this, the total system functions.

## Troubleshooting (2)

### Microcomputer System (System Input)

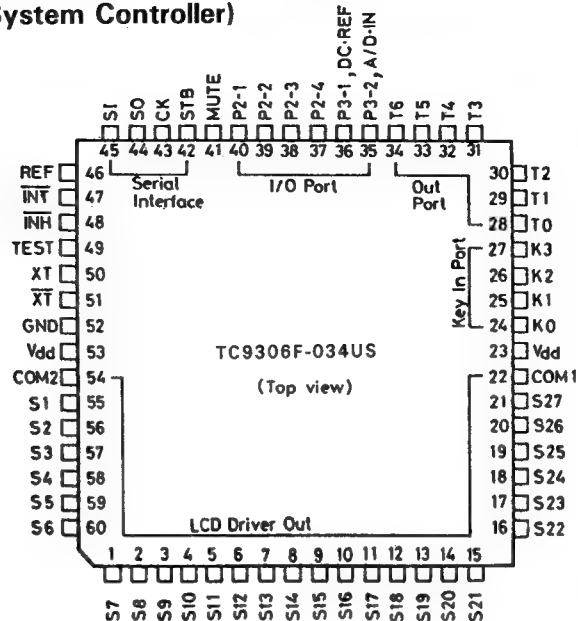


### Audio System



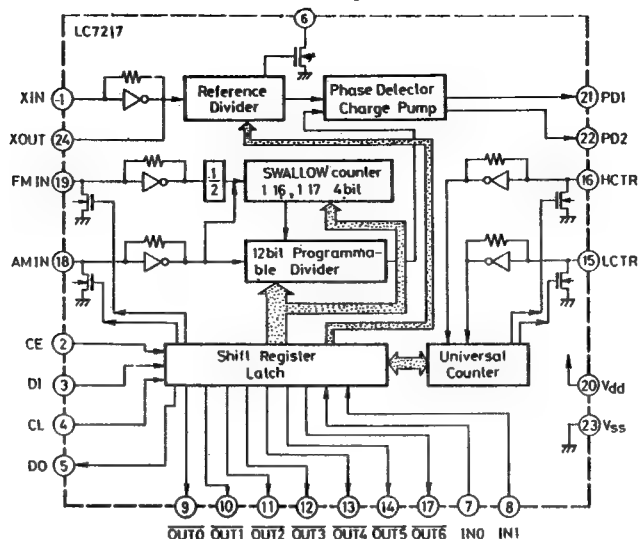
## Internal Block Diagrams of Major ICs

### IC101: TC9306F-034US (System Controller)

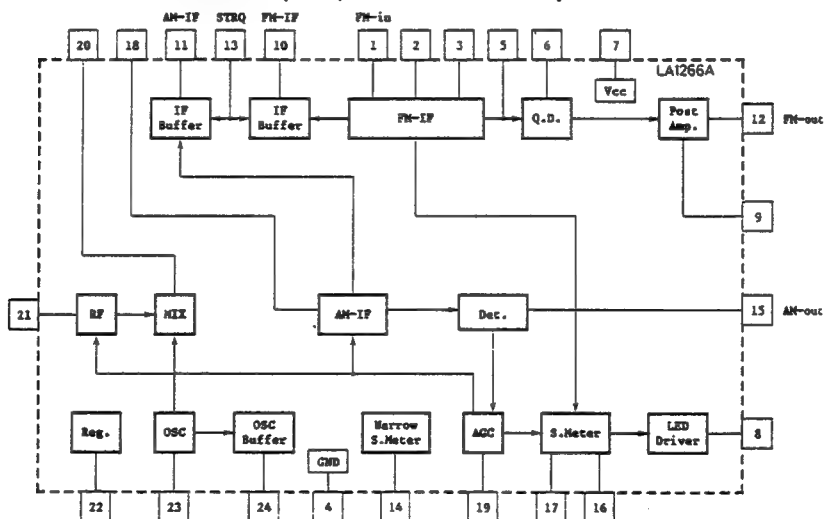


Pin No.	Symbol	Name	I/O	Terminal Function
55~60 1~21	SEG.1~ ~SEG.27	Segment1~ ~Segment27	0	Drive the LCD segment.
22	COM 1	Common 1	0	Drive the common 1 of the LCD.
54	COM 2	Common 2	0	Drive the common 2 of the LCD.
24	K0	Key in 0	I	Key input
25	K1	Key in 1	I	Key input
26	K2	Key in 2	I	Key input
27	K3	Key in 3	I	Key input
28	T0	Key out 0	0	Key output
29	T1	Key out 1	0	Key output
30	T2	Key out 2	0	Key output
31	T3	Key out 3	0	Key output
32	T4	Key out 4	0	Key output
33	T5	Key out 5	0	Key output
34	T6	Key out 6	0	Key output
35	A/D IN	A/D input or TUNED input	I	Input for signal meter or input for TUNED indicator
36	DC REF.	DC reference	I	Reference voltage for A/D
37	P2-4	Key out 7	0	Key output
38	P2-3	DCS IN	I	Input for Direct Call System
39	P2-2	DCS OUT	0	Output for Direct Call System
40	P2-1	STEREO IN	I	Input for stereo indicator
41	MUTE	MUTE	0	"H" output when muting is turned ON.
42	STB	STB	0	Serial Data Bus (Connect to LC7217.)
43	CK	CK	0	Serial Data Bus (Connect to LC7217.)
44	S0	S0	0	Serial Data Bus (Connect to LC7217.)
45	SI	SI	I	Serial Data Bus (Connect to LC7217.)
46	REF	REF	0	Output for PLL reference frequency
47	INT	INT	I	Initialized at "L" level
48	INH	INH	I	State of inhibit at "L" level
49	TEST	TEST	---	Terminal of crystal oscillator (7.2 MHz)
50	XT	XT	---	Terminal of crystal oscillator (7.2 MHz)
51	XT	XT	---	Terminal of crystal oscillator (7.2 MHz)
52	GND	GND	---	Ground
23,53	V DD	V DD	---	+5V (Connecting inside)

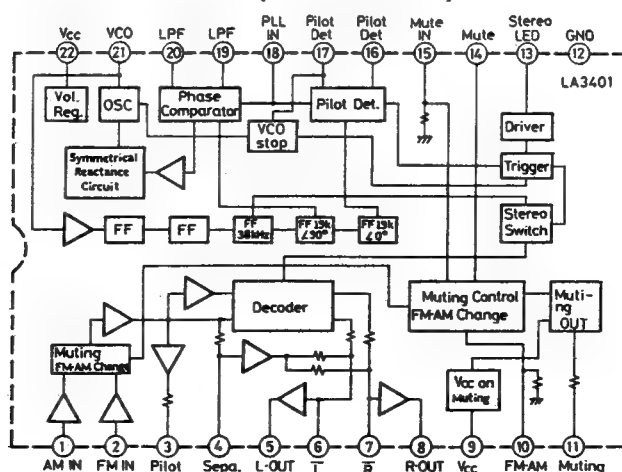
### IC102 : LC7217 (PLL Synthesizer)



### IC104 : LA1266A (FM/AM IF & DET.)



### IC105 : LA3401 (FM M.P.X.)

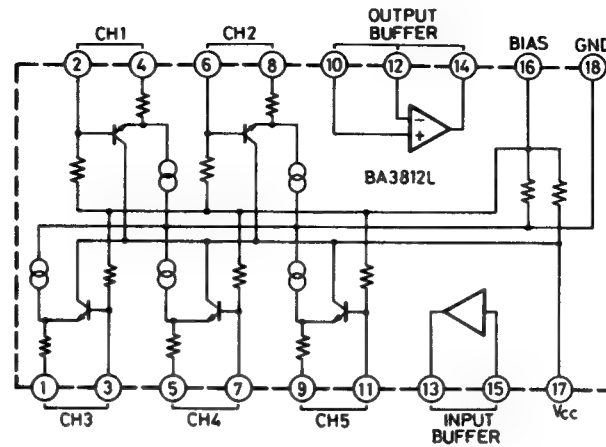


# IC102:LC7217 (PLL Synthesizer)

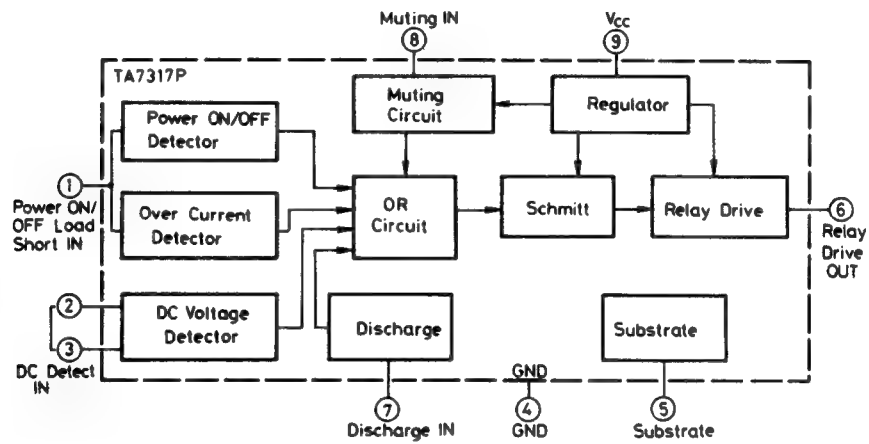
Symbol	Pin No.	Details	Function	I/O
Xin Xout	1 24	X'tal OSC	Crystal oscillator (7.2 MHz)	I O
FMIN	19	Local oscillator signal input	<ul style="list-style-type: none"> <li>FMIN is selected for serial data input: DV=1 is assigned.</li> <li>Input frequency is 10 ~ 130 MHz (125 mVrms min.).</li> <li>The signal passes through the built-in pre-scaler(1/2) and is transmitted to the swallow counter.</li> </ul>	I
AMIN	18	Local oscillator signal input	<ul style="list-style-type: none"> <li>AMIN is selected for serial data input: DV=0 is assigned.</li> <li>When serial data is input: SP=1 is assigned: <ul style="list-style-type: none"> <li>Input frequency is 2 ~ 40 MHz (125 mVrms min.).</li> <li>The signal is transmitted to the swallow counter without passing through the built-in pre-scaler(1/2).</li> </ul> </li> <li>When serial data is input: SP=0 is assigned: <ul style="list-style-type: none"> <li>Input frequency is 0.5 ~ 10 MHz (125 mVrms min.).</li> <li>The signal is transmitted directly to the 12-bit programmable divider.</li> </ul> </li> </ul>	I
PD1 PD2	21 22	Charge pump output	<ul style="list-style-type: none"> <li>PLL charge pump output.</li> <li>When the local oscillator signal frequency divided by N results in a frequency higher than the reference frequency, high level signals are output from PD1 and PD2.</li> <li>When it is lower than the reference frequency, low level signals are output.</li> </ul>	O
SYC	6	Controller clock	This is the controller clock output pin and a 400 kHz signal (duty 66 %) is output after the power is turned ON.	O (N-ch open drain)
Vdd	20	Power supply	Power supply pin for LC7217. It supplies 4.5 ~ 6.5 V when the PLL circuit is activated.	-
Vss	23	Ground	GND pin of LC7217.	-
CE	2	Chip enable	This pin goes high when serial data is input (DI) to LC7217 or output from it.	I
CL	4	Clock	This clock is used to synchronize data when serial data is input (DI) to or output (DO) from LC7217.	I
DI	3	Input data	<ul style="list-style-type: none"> <li>Input pin for serial data which is transmitted from the controller to LC7217.</li> <li>A total of 36 bits of data should be input for initialization.</li> </ul>	I
DO	5	Output data	<ul style="list-style-type: none"> <li>Output pin for serial data transmitted from LC7217 to the controller.</li> <li>A total of 24 bits can be output from the internal shift register in synchronized with CL.</li> </ul>	O (N-ch open drain)
OUT 0 OUT 1 OUT 2 OUT 3 OUT 4 OUT 5 OUT 6	9 10 11 12 13 14 17	Output port	<ul style="list-style-type: none"> <li>Latches O0 ~ O6 of the serial data transmitted from the controller, and inverts the data to output it in parallel.</li> <li>OUT 0 can outputs the time base for clock (8 Hz).</li> <li>(When TB = 1.)</li> <li>OUT 1 and OUT 2 are complementary outputs.</li> <li>OUT 0, OUT 3, OUT 4, OUT 5 and OUT 6 are N-ch open drain outputs (up to 13 V).</li> </ul>	O
IN 0 IN 1	7 8	Input port	The data at input ports IN 0, IN 1 is converted from parallel to serial, and can be output from output pin DO.	I
HCTR	16	General purpose measurement signal input pin	<ul style="list-style-type: none"> <li>With serial data input: SC = 1, HCTR is selected.</li> <li>The signal is transmitted to the general-purpose counter (20-bit binary counter) via a 1/8 divider internally.</li> <li>For this, the value of the general-purpose counter becomes 1/8 of the actual frequency which is input to the HCTR pin.</li> <li>The measured results can be output from the MSB of the general-purpose counter via output pin DO.</li> </ul>	I
LCTR	15	General purpose counter frequency input pin	<ul style="list-style-type: none"> <li>With serial data input: SC = 0, LCTR is selected.</li> <li>At this time, if serial data is input: SF = 1 ; <ul style="list-style-type: none"> <li>The signal is transmitted directly to the general-purpose counter without passing through the internal 1/8 divider.</li> </ul> </li> <li>If serial data is input SF = 0 ; <ul style="list-style-type: none"> <li>Input frequency is 1 Hz ~ 20kHz (VIH = 0.7 VDD min., VIL = 0.3 VDD max.)</li> <li>The measurement periods of 1-cycle and 2-cycle can be selected; when 2-cycle is selected, the input frequency is 2 Hz ~ 20kHz. (GT = 1/0 : 2/1 period)</li> </ul> </li> </ul>	I



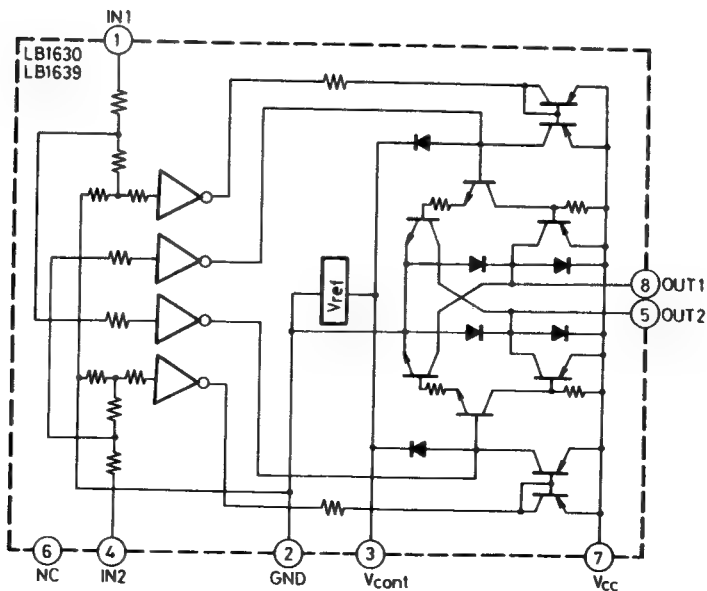
**IC305, IC306: BA3812L (SEA Amplifier)**



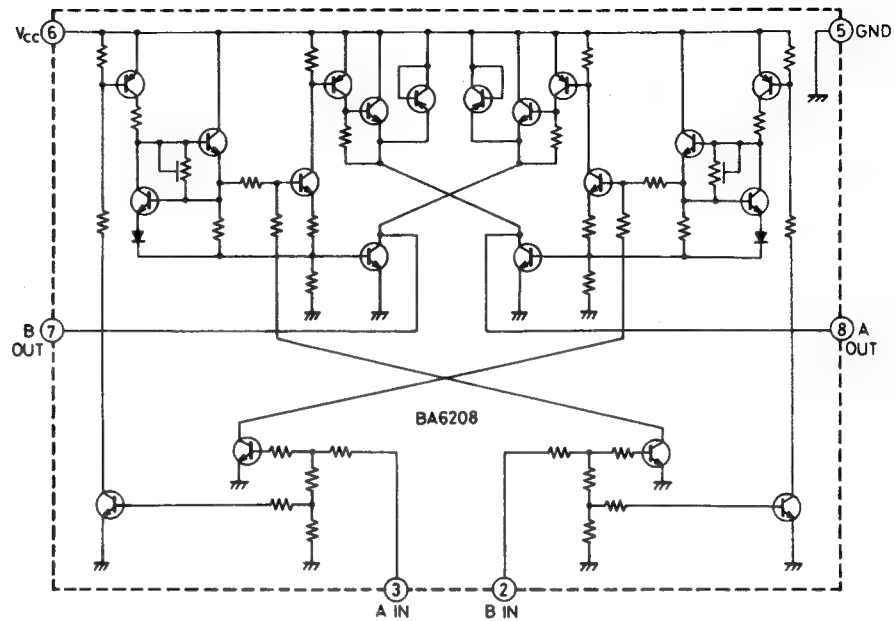
**IC502 : TA7317P (Relay Driver)**



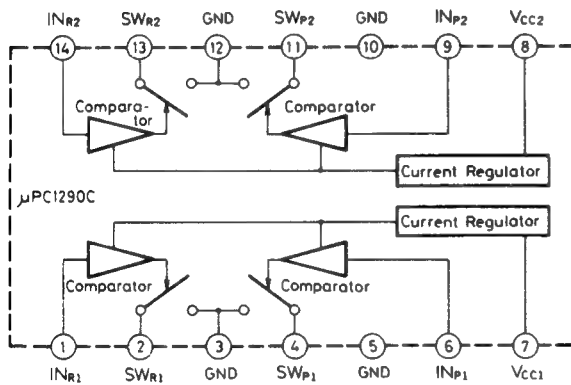
**IC402, IC452, IC454: LB1639 (Motor Driver Controller)**



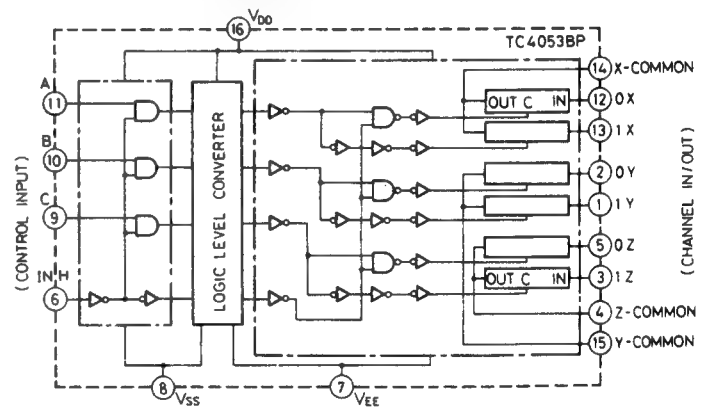
### IC451, IC453 : BA6208 (Motor Driver)



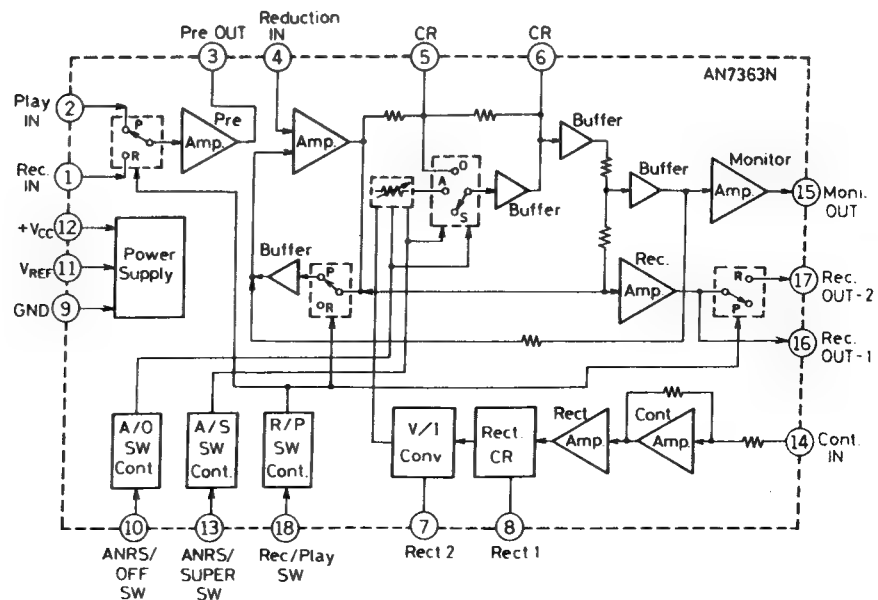
### IC631 : $\mu$ PC1290C (R/P Head Selector)



### IC902 : TC4053BP (Analog Switch)



### IC903, IC904 : AN7363N (Noise Reduction)



## ENJ-021-I

IC501	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	-0.2	-0.2	0	-9.2	-1.3	0	0	0	-38.4	0	38.6	36.8	0	-38.3	-1.3	0	-0.2	-0.2
IC502	1	2	3	4	5	6	7	8	9									
	—	0	0	0	-0.7	1.0	0	1.3	2.8									
IC561	1	2	3	4	5	6	7	8										
	0	0	0	-11.7	0	0	0	12.1										
IC562	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	-11.7	0	0	0	0	0	0	0	0	0	0	0	0	0	5.1	0	0	0
	21	22	23	24	25	26	27	28										
	0	0	0	0	0	0	0	12.1										
IC563	1	2	3	4	5	6	7	8										
	0	0	0	-11.7	0	0	0	12.1										
IC651	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.0
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
	5.1	5.1	5.1	5.1	5.1	5.1	5.1	0	0	0	5.1	5.1	0	0	5.1	0	5.1	0
	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58
	0	5.1	5.1	5.0	0	5.1	5.1	5.1	0	5.1	2.3	2.6	0	5.0	0	3.8	5.1	0
	61	62	63	64														5.1
	0	0	0	0														
IC631	1	2	3	4	5	6	7	8	9	10	11	12	13	14				
	0	0	0	0	0	4.2	12.1	12.1	4.2	0	0	0	0	0				

Q501	Q502	Q542	Q551	Q552	Q553	Q554
G D S B C E B C E B C E B C E B C E B C E						
-8.3 0 0 -38.3 0 -38.4 5.7 10.4 5.1 11.0 20.6 10.4 11.5 20.6 11.0 19.7 12.1 20.4 19.1 12.1 19.7						
Q555 Q556 Q557 Q558 Q561 Q562 Q563						
B C E B C E B C E B C E B C E B C E B C E						
12.0 19.1 11.5 5.8 10.4 5.2 -12.2 -23.4 -11.7 -12.8 -23.4 -12.2 -0.2 0 0 -0.2 0 0 0 0 0						
Q565 Q566 Q567 Q601 Q602 Q603 Q605						
B C E B C E B C E B C E B C E B C E B C E						
0 0 0 0 0 0 0 0.7 0 0 0.6 0 0 3.6 4.2 4.2 0.7 0 0						
Q606 Q607 Q608 Q609 Q610 Q631 Q633						
B C E B C E B C E B C E B C E B C E B C E						
0.7 0 0 0.1 5.0 0 0.6 1.9 0.1 5.1 0 0 5.1 0 0 11.7 11.6 11.6 0 11.6 0						
Q635 Q636 Q637 Q638 Q641 Q642 Q643						
B C E B C E B C E B C E B C E B C E B C E						
0.6 0 0 0.6 0 0 5.1 0 0 0 6.6 0 -0.3 5.1 0 0 5.1 0 5.1 0 5.1						
Q644 Q645 Q646 Q647 Q648 Q649 Q650						
B C E B C E B C E B C E B C E B C E B C E						
9.3 4.9 9.3 0 9.3 0 9.3 4.9 9.3 0 9.3 0 9.8 10.4 10.4 5.1 0 0						

FW201	1	2	3	4	5	6
	0	0	0	12.1	5.1	0
FW311	1	2	3			
	0	0	0			
FW313	1	2	3	4	5	
	0	0	0	-9.2	5.1	
FW507	1	2	3	4	5	6
	0	0	0	0	0	0

J301	1	2	3	4	5	6	7
	0	-11.7	12.1	0	0	0	0
J312	1	2	3				
	0	0	0				
J455	1	2	3	4	5	6	7
	0	0	0	0	0	0	0
J456	1	2	3	4	5	6	
	12.0	12.0	5.1	0	0	0	
J457	1	2	3	4			
	4.9	10.4	4.9	0			
J458	1	2	3	4	5	6	7
	8.6	8.7	0	0	0	0	0
J603	1	2	3	4			
	9.3	10.4	10.4	10.4			

JB401	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	3.9	0	5.1	0	0	5.1	5.1	0	5.2	0	5.1	0	5.1	5.1	5.0	5.1	5.1	5.1
	21	22	23															4.7
	0	0	5.1															

## ENJ-011

IC901	1	2	3	4	5	6	7	8
	6.4	6.2	6.0	0	6.0	6.2	6.6	12.1
IC902	1	2	3	4	5	6	7	8
	6.4	6.2	6.6	6.2	6.2	0	0	0
IC903	1	2	3	4	5	6	7	8
	6.2	6.1	6.1	6.2	6.2	6.2	6.2	0
IC904	1	2	3	4	5	6	7	8
	6.2	6.1	6.1	6.2	6.2	6.2	6.2	0

Q901	Q902	Q903	Q904	Q905	Q906	Q907
B C E B C E B C E B C E B C E B C E						
0.6 0 0 0.6 0 0 0.6 0 0 0.6 0 0 0 12.1 0 0 12.1 0						
Q908	Q909	Q910	Q911			
B C E B C E B C E B C E						
0 12.1 0 0 0 0 0 0 0 0 0 0						

P901	1	2	3	4	5	6	7	8	9	10	11	12	13
	0	0	0.6	0	0	0	0	0	0	5.1	5.1	12.1	0
P902	1	2	3	4	5	6	7	8	9				
	11.6	0	2.8	0	0	0	0	0	5.0				

## ENJ-004

IC701	1	2	3	4	5	6	7	8
	1.2	0.7	3.0	9.6	0	3.0	0.7	1.2
IC702	1	2	3	4	5	6	7	8
	1.2	0.7	2.7	9.7	0	3.1	0.7	1.2

Q701	Q702	Q751	Q752	Q753	Q754	Q803
G D S G D S G D S G D S G D S G D S B C E						
3.6 3.0 3.0 3.6 3.0 3.0 3.4 2.8 2.8 3.7 3.1 3.1 0 2.8 2.8 0 3.1 3.1 1.4 5.1 0.8						
Q804	Q805	Q806	Q807	Q808	Q809	Q810
B C E B C E B C E B C E B C E B C E						
1.5 4.9 0.9 0 0 0 0 0 0 0 0 0 0 0.6 0 0 0.6 0 0						
Q811	Q812					
B C E B C E						
0.6 0 0 0.6 0 0						

PM701	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	0	0	0	12.0	0	0	0	12.1	0	0	0	12.0	0	0	0
PM801	1	2	3	4	5	6	7	8	9	10					
	0	0	5.1	5.1	0	0	12.1	0	0	0					

## ENF-044-I

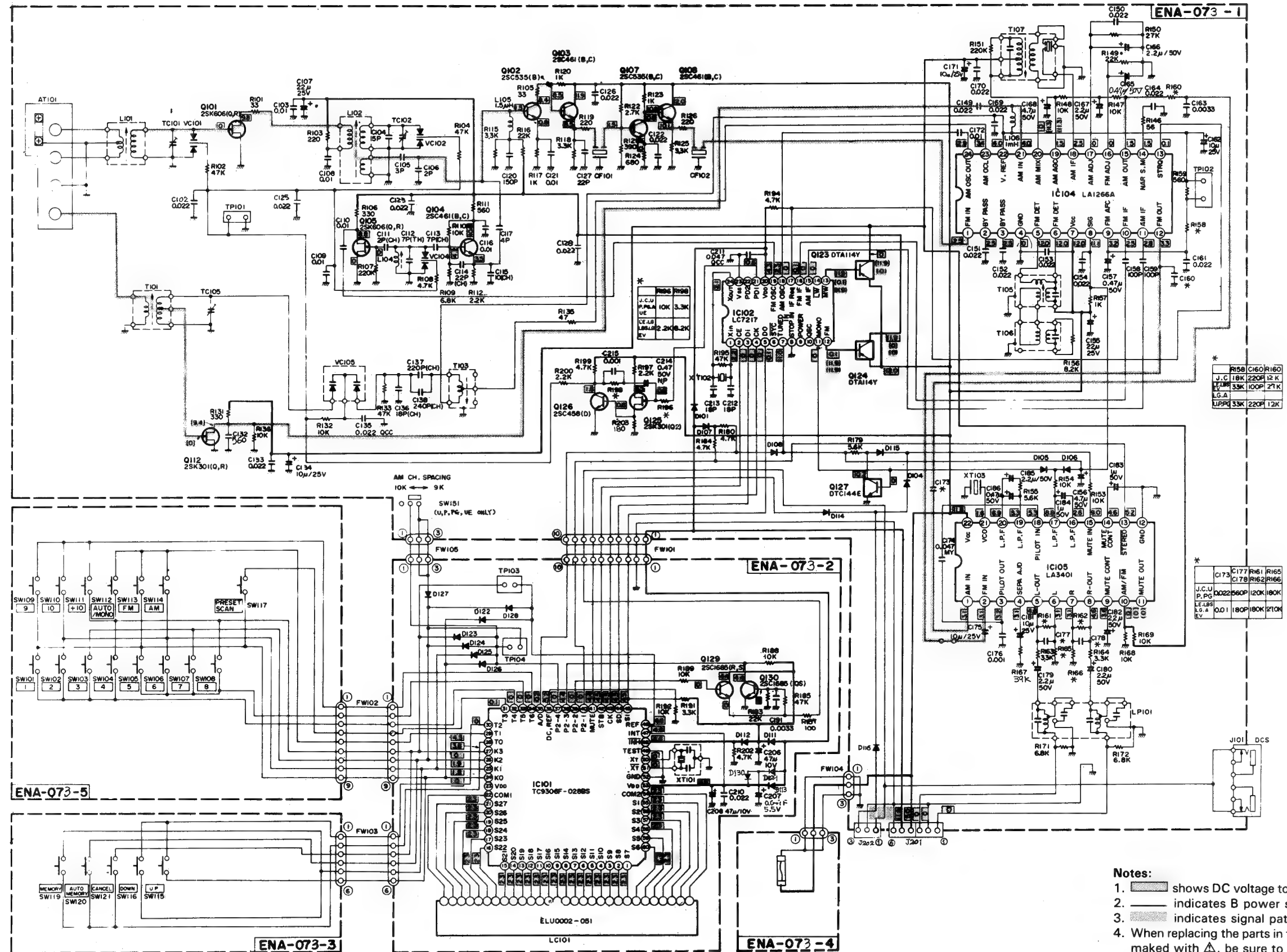
IC401	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	5.1	3.8	5.0	5.1	0	0	0	0	5.1	5.1	5.1	0	0	0	0	0	5.1	0	5.1	5.1
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	5.1	5.1	5.1	5.1	5.1	5.1	0	0	0	0	0	5.1	0	0	0	5.1	5.1	0.3	5.1	0.3
	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
	0	5.1	5.1	5.1	5.1	2.8	2.5	5.0	0	0	5.0	5.1	5.1	5.1	0.3	5.1	5.1	5.1	4.7	5.0
	61	62	63	64																
5.0	5.1	5.1	0																	
IC402	1	2	3	4	5	6	7	8												
	5.0	0	0.1	5.0	0	0	5.2	0.1												
IC403	1	2	3																	
	5.1	5.0	0																	
IC305	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
	-1.2	0	0	-1.2	-1.2	0	0	-1.2	-1.2	-0.8	0	-0.8	-0.8	-0.8	-0.1	0	7.0	-6.8		
IC306	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
	-1.2	0	0	-1.2	-1.2	0	0	-1.2	-1.2	-0.8	0	-0.8	-0.8	-0.8	-0.1	0	7.0	-6.8		

Q401	Q402
B C E B C E	
0 5.1 0 5.1 -0.3 5.1	

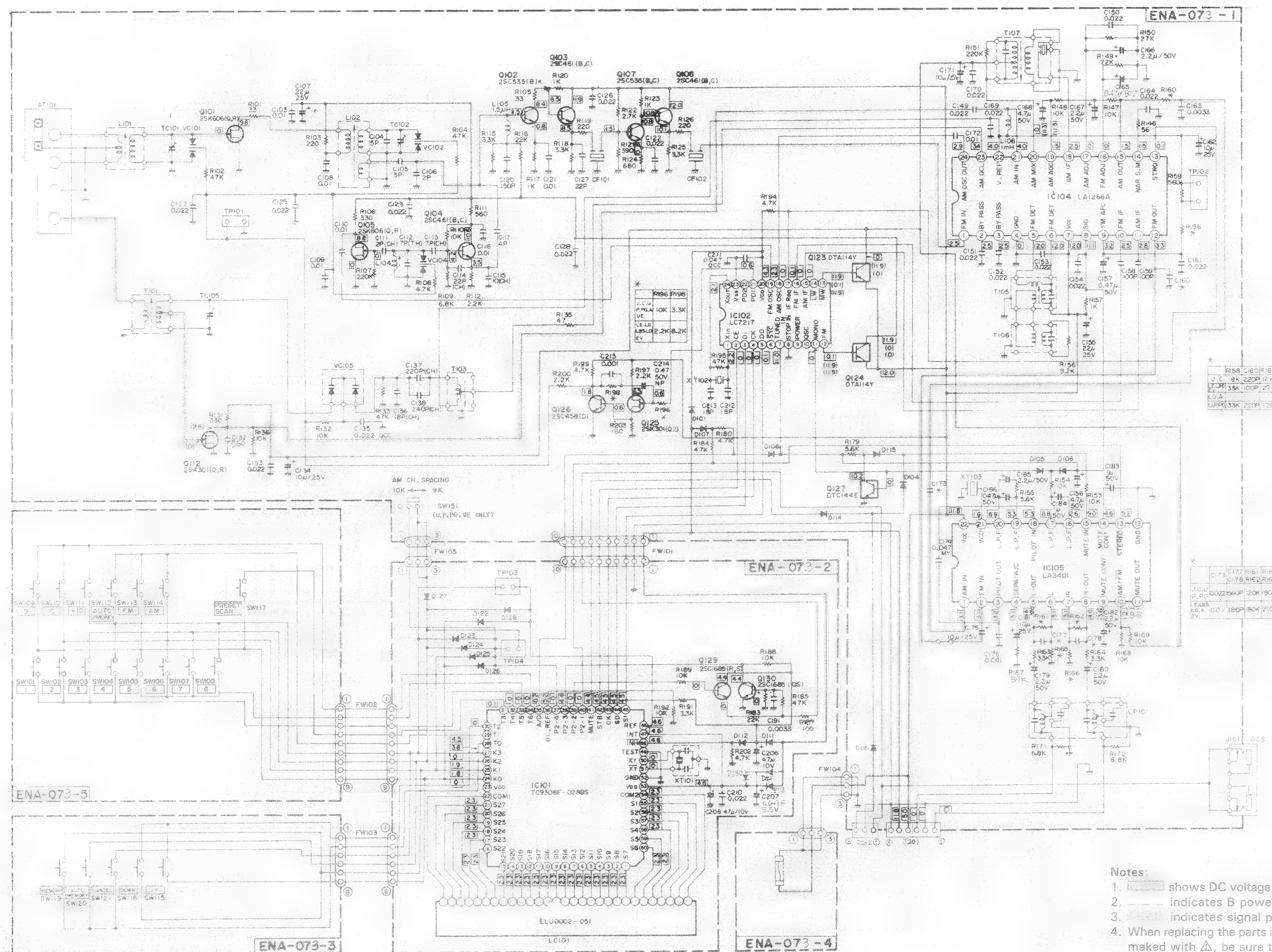
FW401	1	2	3	4
	0	1.8	0.1	0
FW402	1	2	3	4
	5.1	0	4.9	0
FW403	1	2	3	4
	5.1	5.1	0	0

J411	1	2	3	4	5	6	7	8
	4.8	0	0	0	4.8	4.8	4.8	0
J412	1	2	3	4	5	6		
	3.8	5.1	5.1	3.1	5.1	3.1		

# Schematic Diagram (1) FM/AM Tuner Section



## Schematic Diagram (1) FM/AM Tuner Section

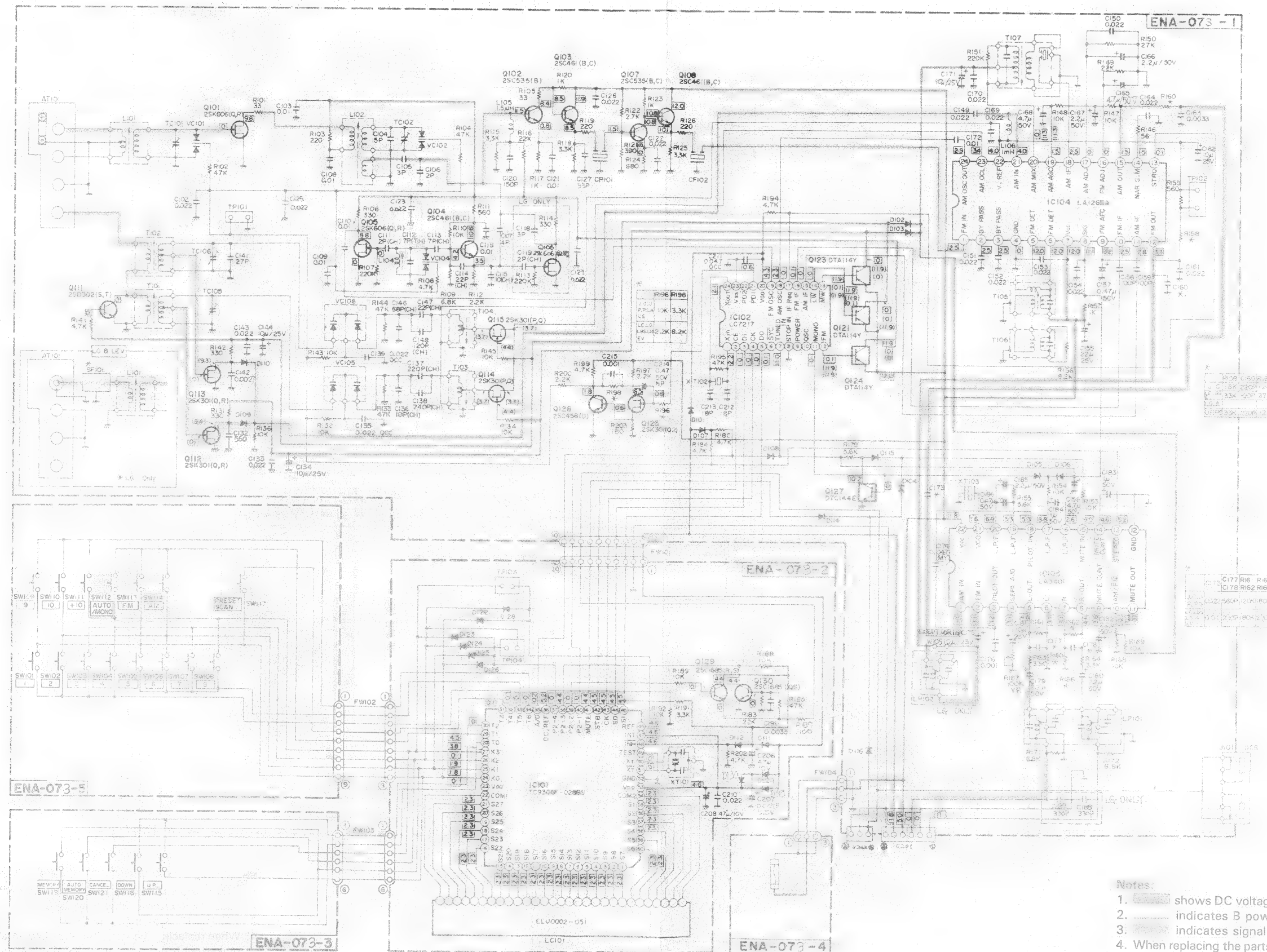




DR-E500BK  
DR-E500LBK

DR-E500BK  
DR-E500LBK

(2) FM/MW/LW Tuner Section



**ENA-073-1**






**ENA-073-2**

**ENA-073-3**

**ENA-073-4**

**Notes:**

1. shows DC voltage
2. indicates B power
3. indicates signal
4. When replacing the part

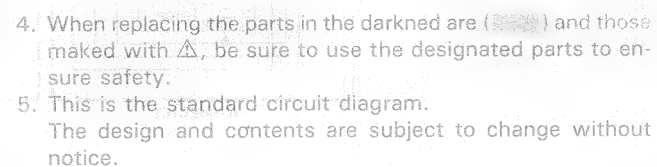
- Notes:**
1.  shows DC voltage to the chassis with no signal input.
  2.  indicates B power supply.
  3.  indicates signal path.
  4. When replacing the parts in the darkened are (  ) and those marked with , be sure to use the designated parts to ensure safety.
  5. This is the standard circuit diagram.  
The design and contents are subject to change without notice.





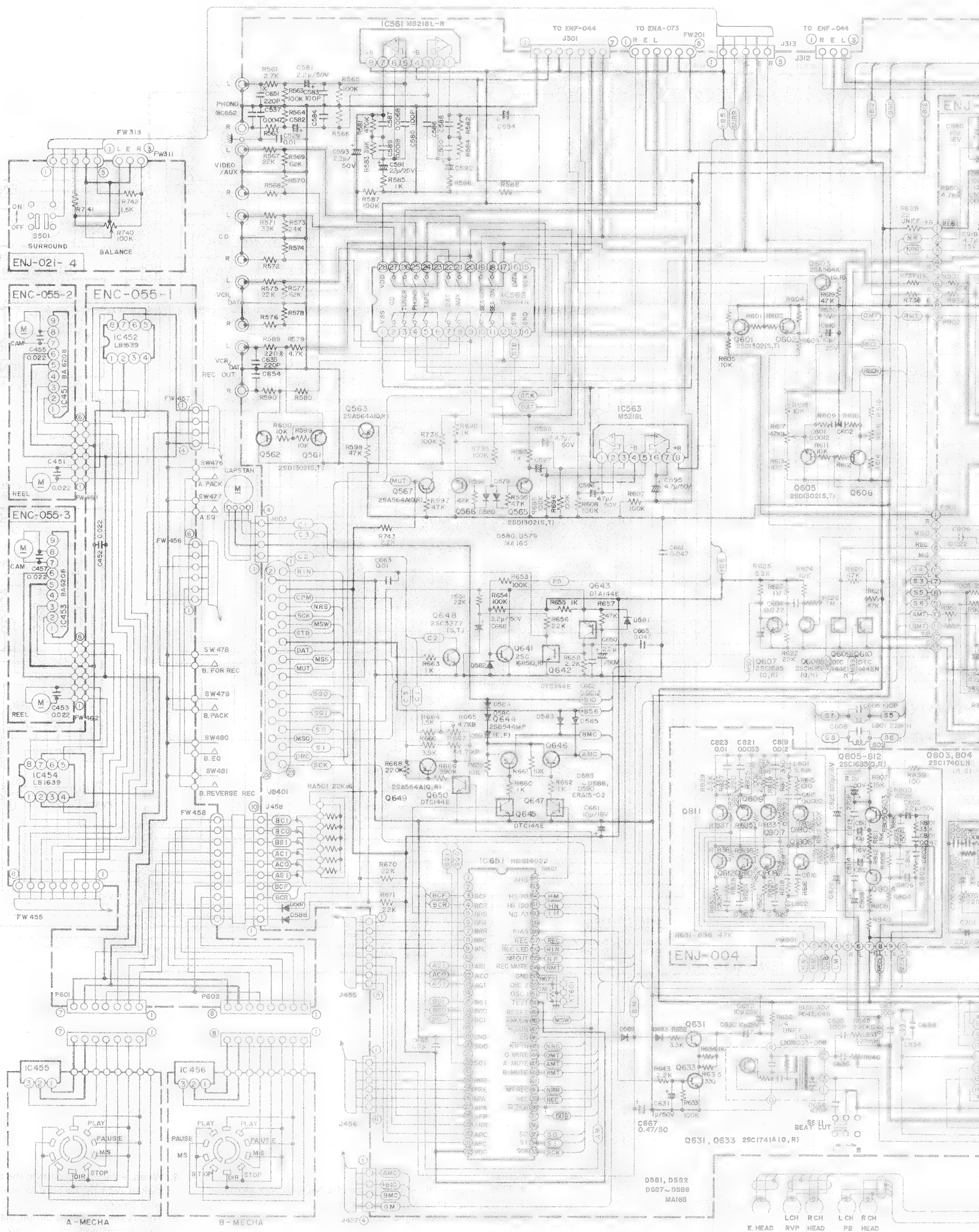




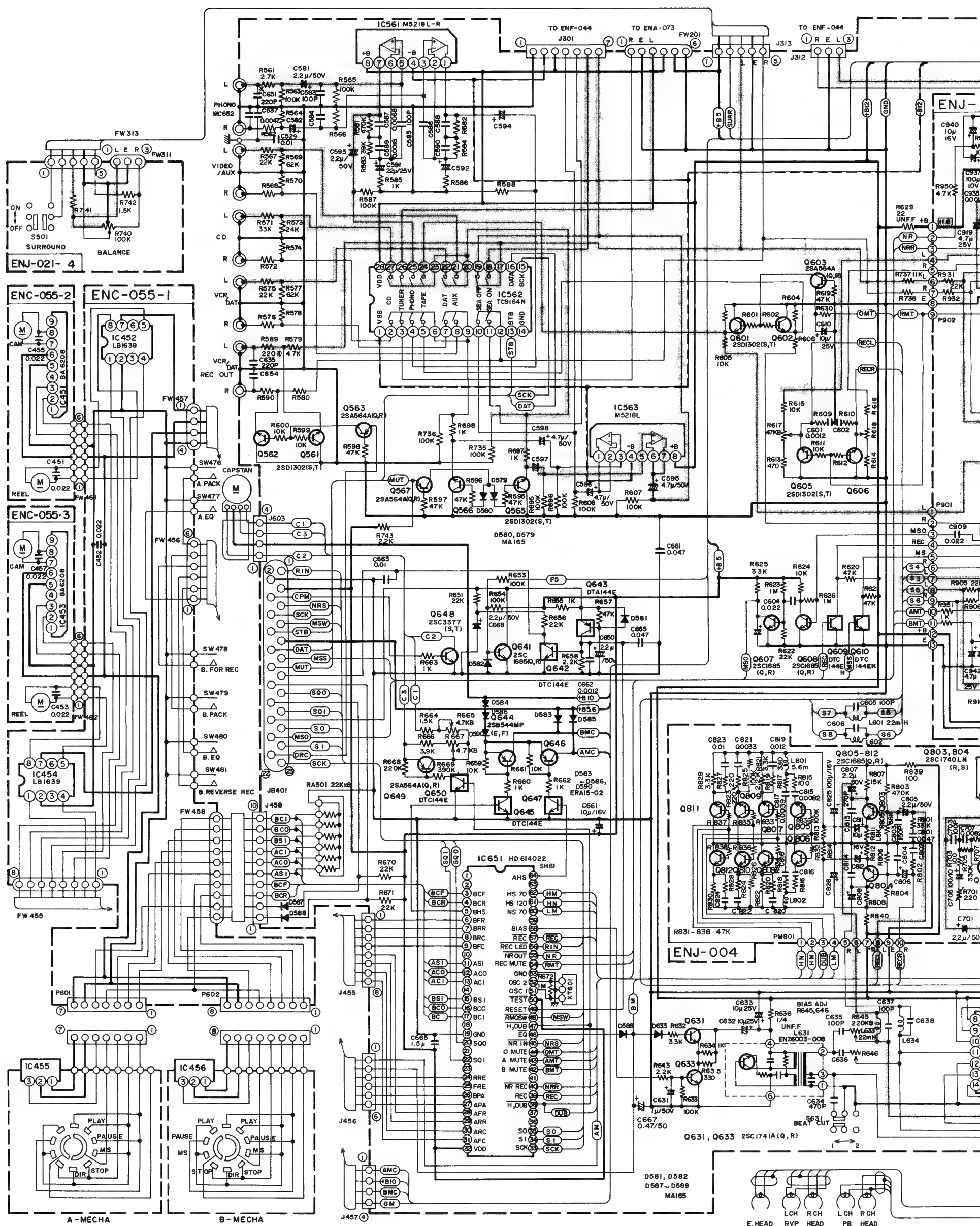




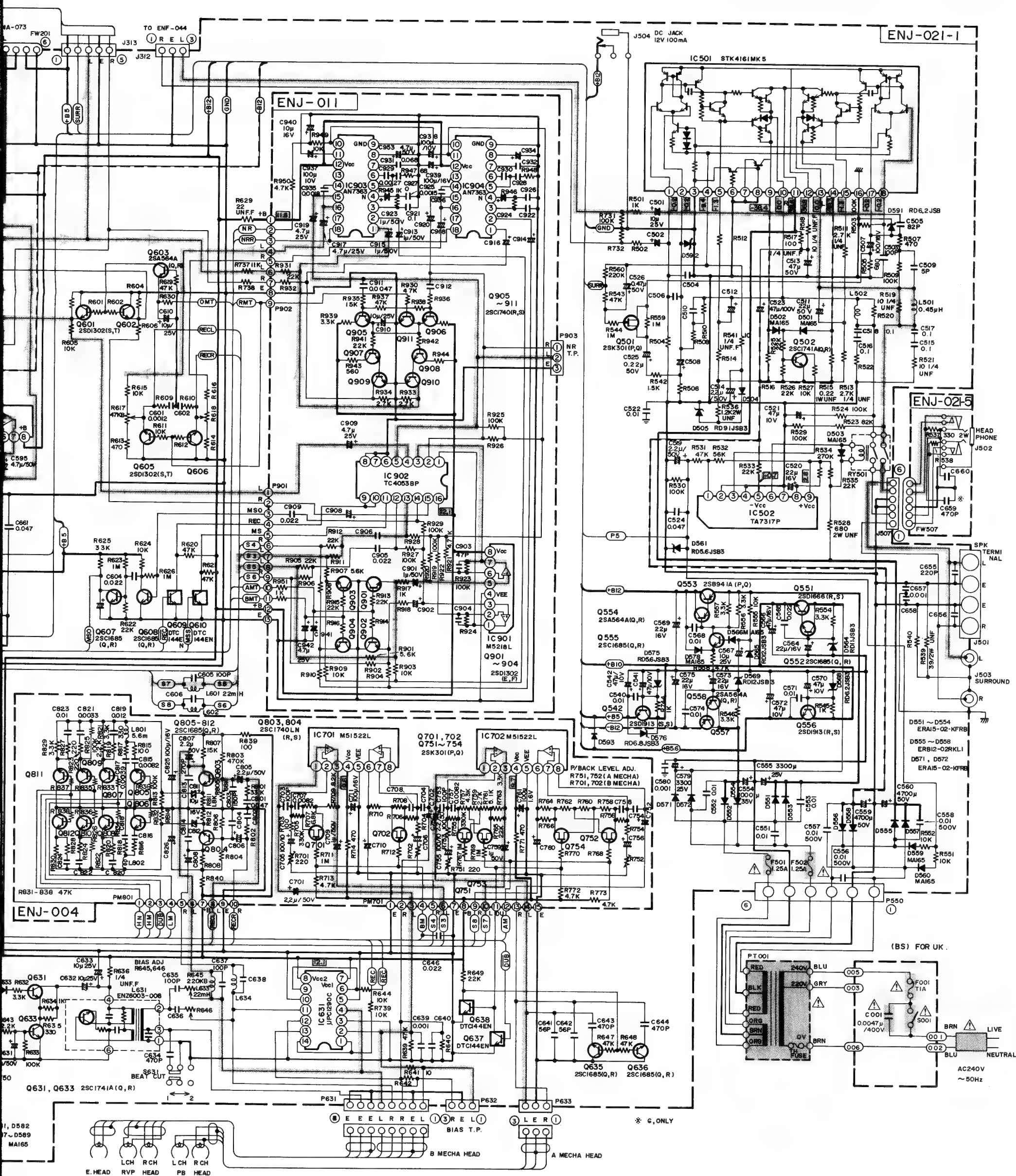
### (3) Audio Section

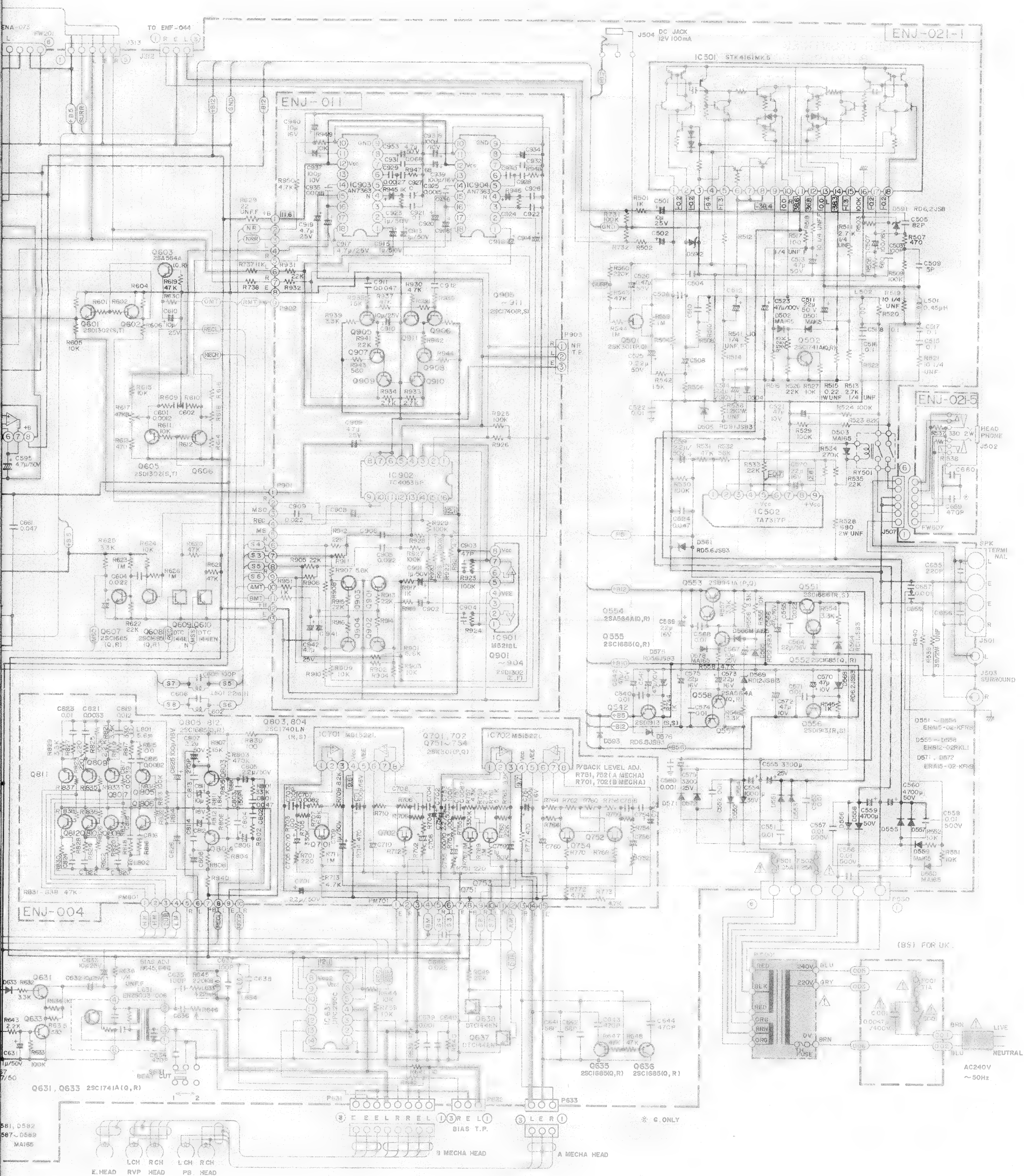


### (3) Audio Section

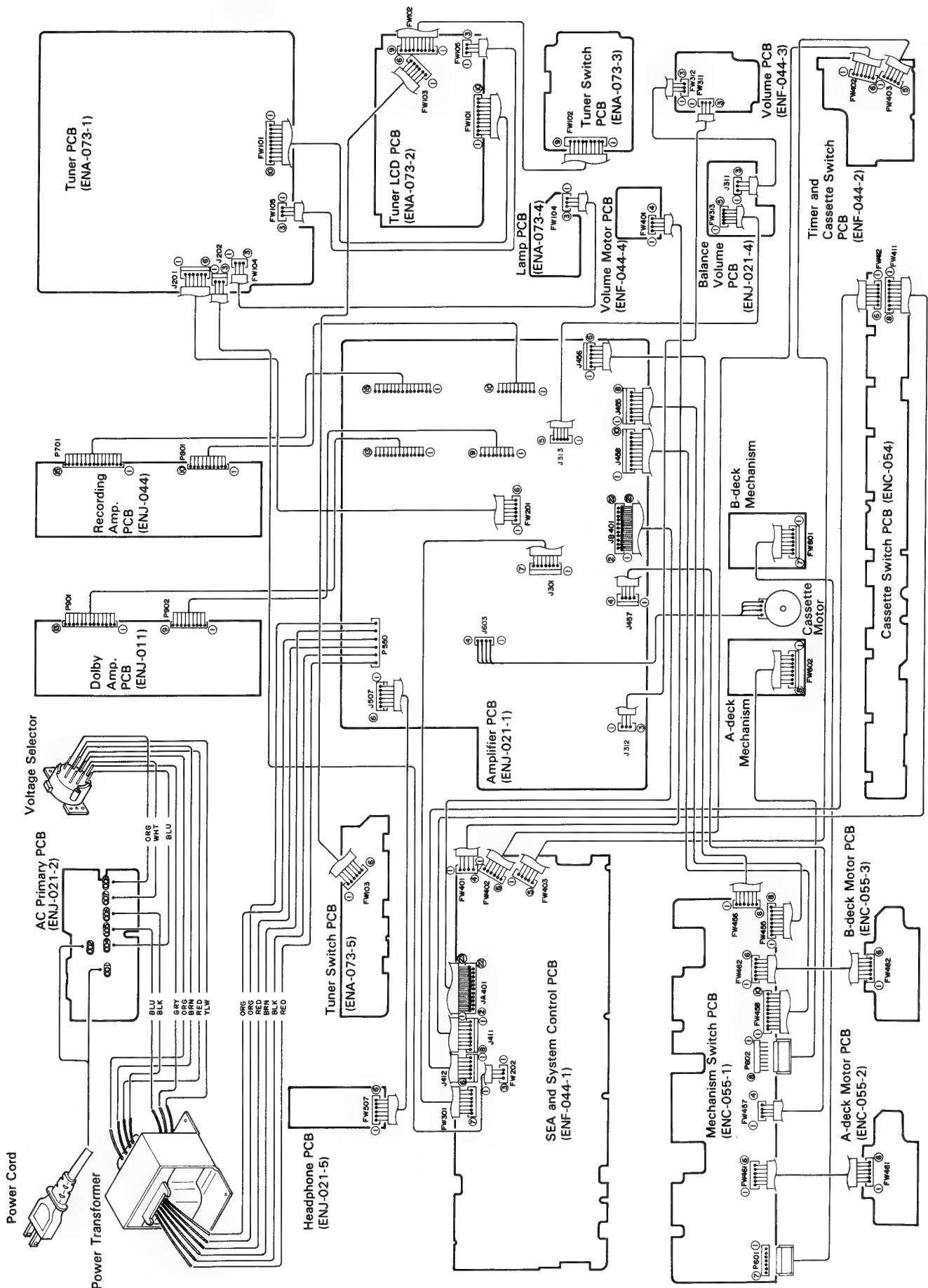








## Connection Diagram





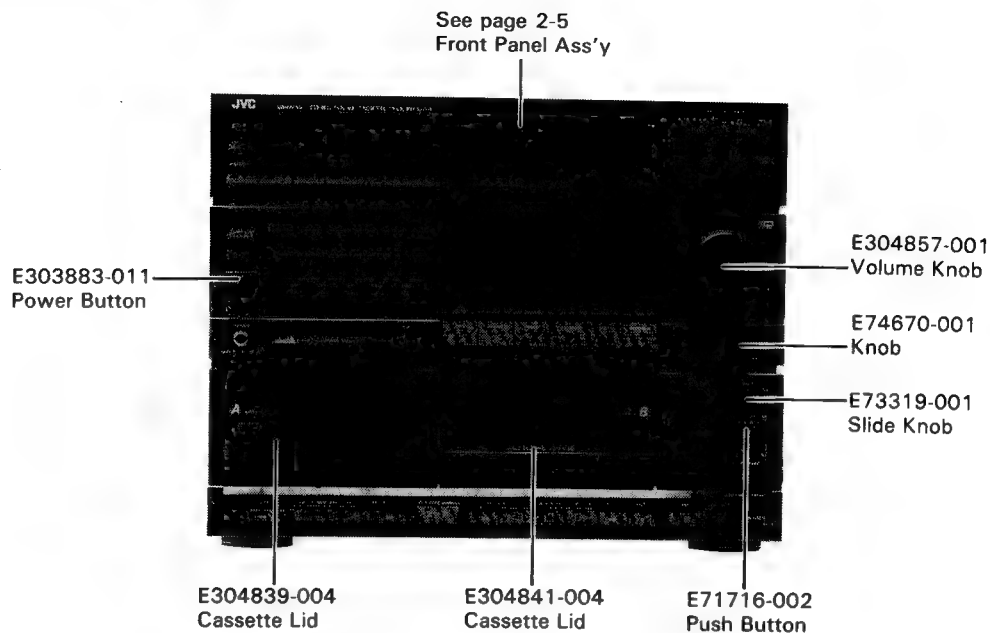
# PARTS LIST

## Contents

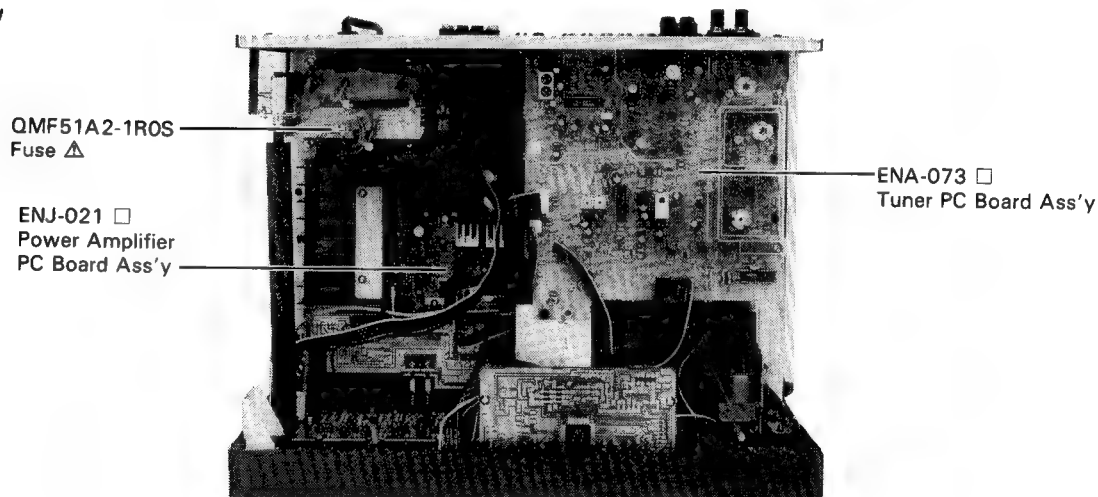
Main Parts Locations .....	2-2
Exploded View and Parts List .....	2-3
Mechanism Ass'y and Parts List .....	2-7
■ A Mechanism .....	2-7
■ B Mechanism .....	2-9
Printed Circuit Board Ass'y and Parts List .....	2-12
■ ENA-073 <input type="checkbox"/> Tuner PC Board Ass'y .....	2-12
■ ENJ-004 <input checked="" type="checkbox"/> Equalizer PC Board Ass'y .....	2-16
■ ENJ-021 <input type="checkbox"/> Power Amplifier PC Board Ass'y .....	2-18
■ ENF-044 <input checked="" type="checkbox"/> System Micon & SEA PC Board Ass'y .....	2-22
■ ENC-054 <input checked="" type="checkbox"/> Cassette Switch PC Board Ass'y .....	2-24
■ ENC-055 <input checked="" type="checkbox"/> Cassette Motor Drive PC Board Ass'y .....	2-25
■ ENJ-011 <input checked="" type="checkbox"/> ALC & NR PC Board Ass'y .....	2-26
Packing Materials and Parts Numbers .....	2-28
Accessories List .....	2-29

## Main Parts Locations

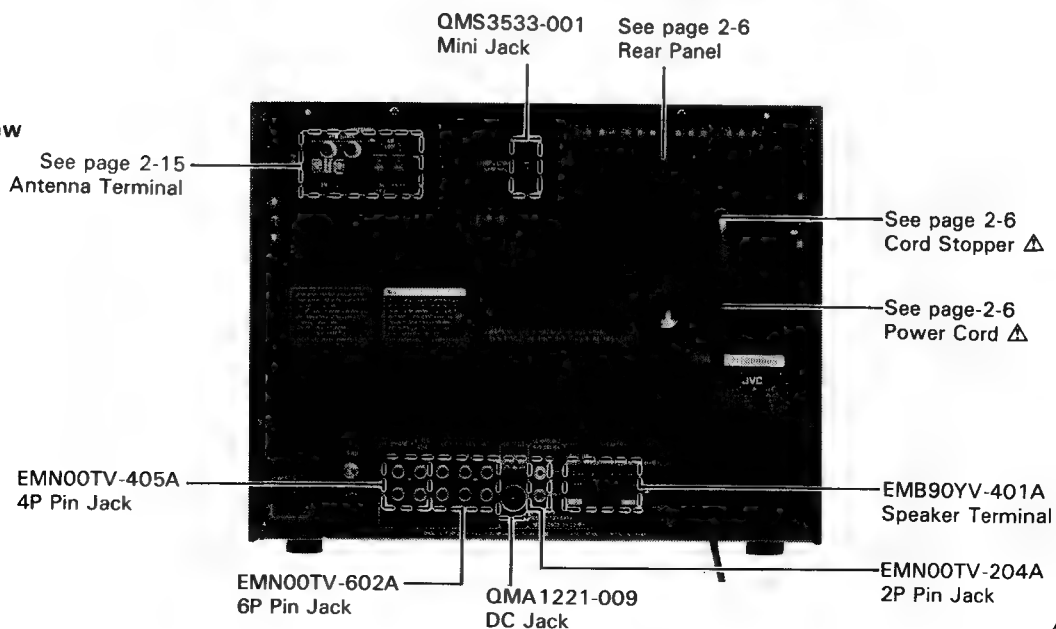
### ■ Front View



### ■ Top View



### ■ Rear View



△	Item	Parts Number	Parts Name	Q'ty	Description	Areas
	1	EFP-DRE500BKU	Front Panel Ass'y	1		A, P, PG, U
		EFP-DRE500LBKE	Front Panel Ass'y	1		LE, LEF, LEV, LG, LBS
	1-1	E11708-001	Front Panel	1		A, P, PG, U
		E11708-002	Front Panel	1		LE, LEF, LEV, LG, LBS
	1-2	E305350-001	Tuner Window			
	1-3	E305352-001	Amp Window	1		
	1-4	E74671-001	Ornament	1	Tuner	
	1-5	E74673-001	Ornament	1	Amp	
	1-6	E74684-001	Indicator Plate	1	CD Rac	
	1-7	E305407-003	Indicator Plate	1		
	1-8	E72437-006	Sheet	1		
	1-9	E72436-007	Screen	1		
	1-10	E69777-003	Ref. Plate	2		
	2	E304857-001	Volume Knob	1		
	3	SLT-25VR52F	L.E.D	1	Red	
	4	E304320-003	Holder	1		
	5	EWS142-006H	Socket Wire	1		
	6	E74670-001	Knob	1	Balance	
	7	E304839-004	Cassette Lid	1	Deck A	
	8	E304841-004	Cassette Lid	1	Deck B	
	9	E25700-003	Cassette Holder	1	Cassette A	
	10	E25701-003	Cassette Holder	1	Cassette B	
	11	VKY4180-001	Holder Spring	4		
	12	E74187-001	Holder Bracket	1	Center	
	13	E74188-001	Holder Bracket	1	Right	
	14	SBSF3008Z	Screw	34		
	15	E73311-001	Damper Holder	2		
	16	E73310-001	Damper Gear	2		
	17	SBSF3012Z	Screw	2		
	18	E25994-001	Metal Cover	1		
	19	SDSE3008M	Screw	10		
	20	E73318-002	Belt	1		
	21	E304340-001	Counter	1		
	22	SBSB3008N	Screw	25		
	23	E74180-002	Push Button	1	Surround	
	24	E48729-008	Plastic Rivet	4		
	25	E305396-001	BAL. Bracket	1		
	26	E73319-001	Slide Knob	1		
	27	E71716-002	Push Button	2		
	28	VKY4279-002	Rack Spring	2		
	29	SDST2605Z	Screw	4		
	30	SPST2608Z	Screw	6		
	31	E305355-001	Shield Bracket	1		
	32	E74186-001	Hed Phone Bracket	1		
	33	E74675-001	Bracket	1		
	34	E305155-001	LCD Bracket	1		
	35	E74676-002	Bracket	1		
	36	E73828-001	Sheet	1		
	37	E304554-001	Reflector	1		
	38	ELP4101-003	Fuse Lamp	1		
△	39	E305354-001	Side Bracket	1		
△	40	QMF51A2-1R25S	Fuse	2		Except LBS
		QMF51E2-1R25SBS	Fuse	2		LBS
	41	E68587-008	Bracket	1		
	42	E48729-007	Plastic Rivet	1		

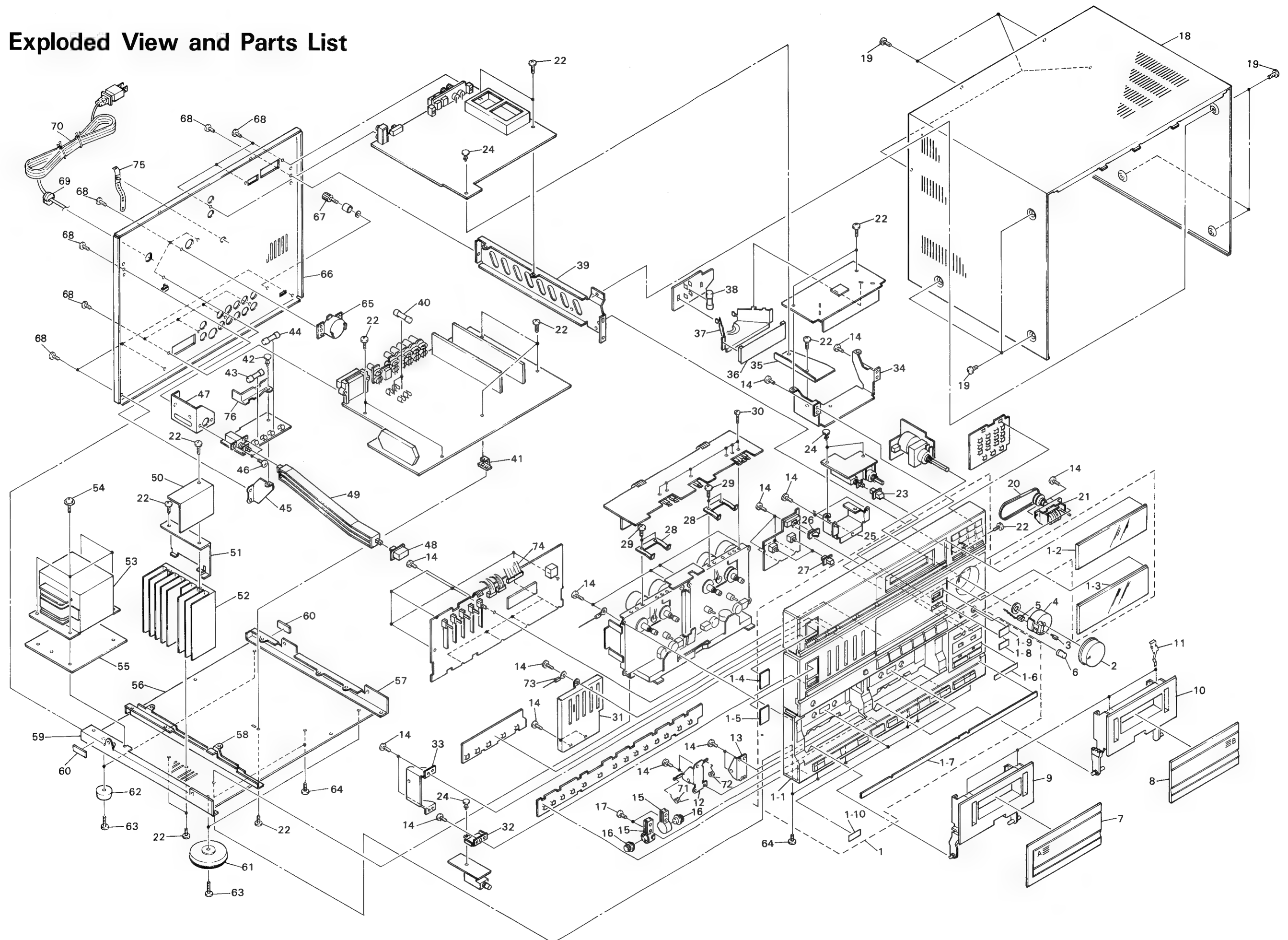
△ : Safety Parts

△	Item	Parts Number	Parts Name	Q'ty	Description	Areas
△	43	QMF51A2-2R0S	Fuse	1	F001	U, P, PG
△		QMF51A2-1R0S	Fuse	1	F001	A, LE, LEV, LG
△		QMF51E2-1R0SBS	Fuse	1	F001	LBS
△	44	QMF51A2-1R0S	Fuse	1	F002	U, P, PG
	45	E72331-002	Stay Bracket	1		
	46	SBST3006Z	Screw	2		
	47	E72226-002	Switch Bracket	1		
	48	E303883-011	Power Button	1		
	49	E304302-002	Push Shaft	1		
	50	E74080-001	Cover	1		
	51	E72894-001	Leaf Spring	1		
	52	E304760-002	Heat Sink	1		
△	53	ETP1050-18EA	Power Transformer	1		A, LE, LEF, LEV, LG
△		ETP1050-18FA	Power Transformer	1		P, PG, U
△		ETP1050-18EABS	Power Transformer	1		LBS
	54	E65389-002	Spacial Screw	4		
	55	E74819-001	Trans Bracket	1		
	56	E25703-001	Bottom Plate	1		
	57	E304850-001	Side Bracket	1	Right	
	58	E304849-002	Center Bracket	1	Center	
	59	E304848-002	Side Bracket	1	Left	
	60	EXO035010R20S	Spacer	2		
	61	E74185-001	Foot	2	Front	
	62	E47227-020	Foot	2	Rear	
	63	SBST3008Z	Screw	4	Foot	
△	64	SDSB3006M	Screw	8		
	65	QSR0085-007	Voltage Selector	1		U, P, PG
	66	E25992-008	Rear Panel	1		U, P, PG
		E25992-003	Rear Panel	1		A
		E25992-004	Rear Panel	1		LE, LEF
		E25992-005	Rear Panel	1		LBS
		E25992-006	Rear Panel	1		LEV, LG
	—	E303260-144	Rating Label	1		LE, LEF, LEV
	67	E70078-001	GND. Terminal	1		
	68	SBSB3008M	Screw	14		A, LE, LEF, LEV, LG, LBS
△	69	SBSB3008M	Screw	16		U, P, PG
△		QHS3876-162	Cord Stopper	1		Except LBS
△		QHS3876-162BS	Cord Stopper	1		LBS
△	70	QMP2560-244	Power Cord	1		A
△		QMP7600-200	Power Cord	1		P, PG, U
△		QMP3900-200	Power Cord	1		LE, LEF, LEV
△		QMP3990-200	Power Cord	1		LG
△		QMP9017-008BS	Power Cord	1		LBS
	71	E73314-002	Holder Spring	1		
	72	E73315-002	Holder Spring	1		
	73	EWTO21-003	Lug Wire Ass'y	1		
	74	EWR1PE-30TT	Flat Cord	1	FC 401	
	75	E304880-001	Cord Holder	1		
	76	E74845-001	Primary Cover	1		LBS, LE, LEV

△ : Safety Parts

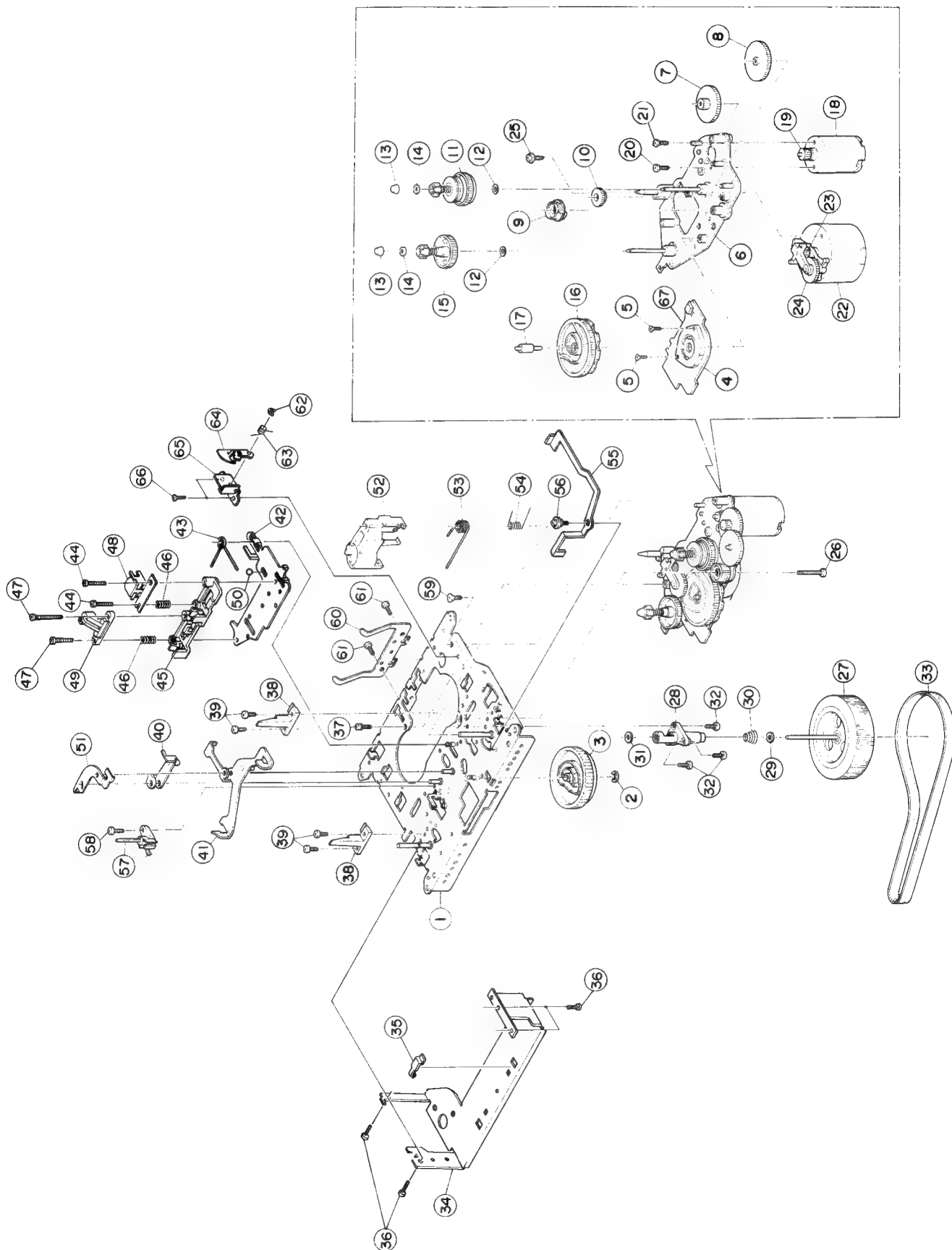
The Marks for Designated Areas			
A.....	Australia	LBS.....	U.K. (with LW)
P,PG.....	U.S. Military Market	LEV.....	Switzer Land (with LW)
LE,LEF.....	Continental Europe (with LW)	U.....	Other Countries
LG.....	West Germany (with LW)	No mark indicates all areas.	

# Exploded View and Parts List



# Mechanism Assembly and Parts List

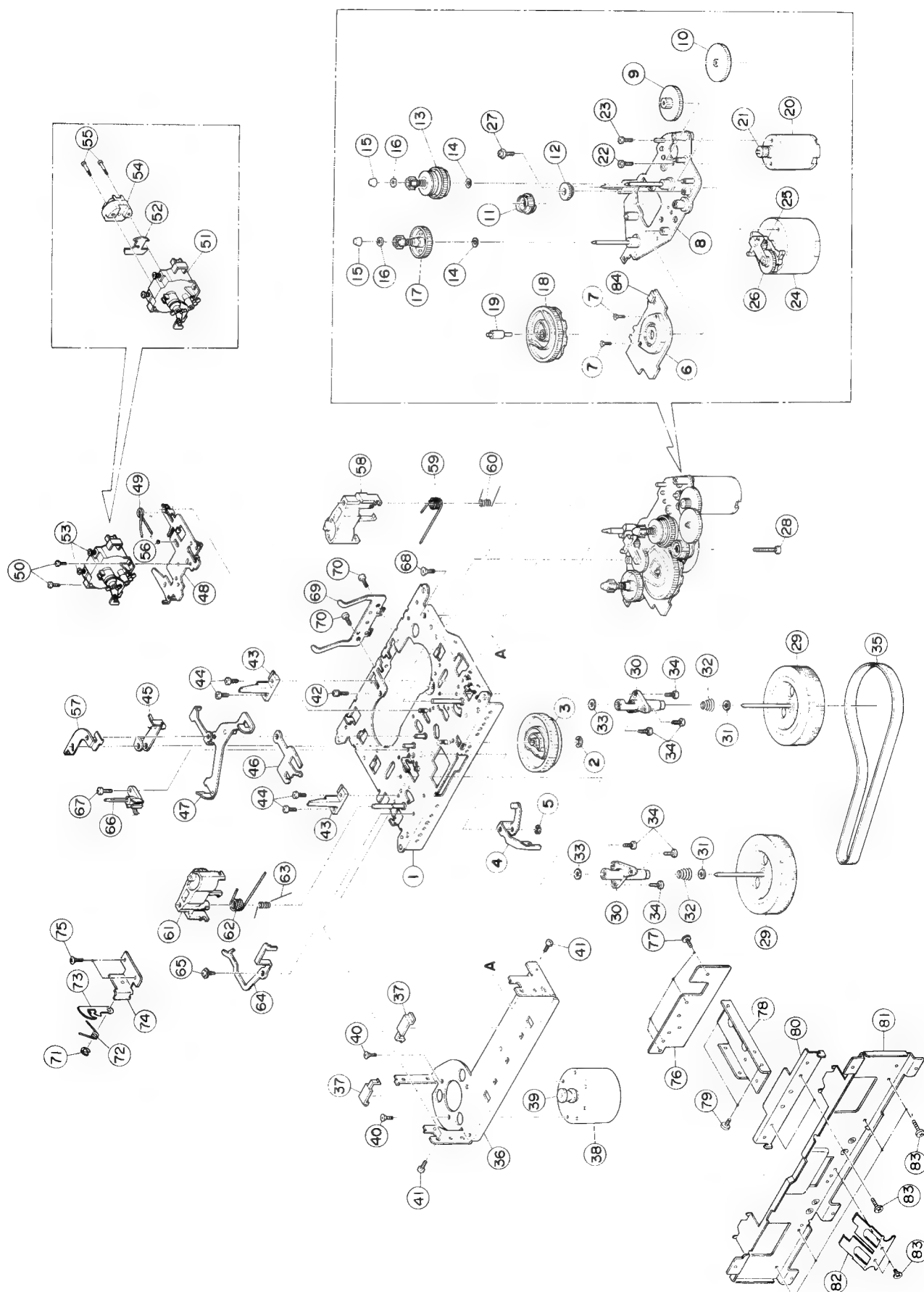
## ■ A Mechanism



■ A Mechanism

Item	Part Number	Part Name	Q'ty	Description	Areas
1	VKL2389-00A	Chassis Base Ass'y	1		
2	REE2000	E. Washer	1		
3	VKS2186-002	P. Roller Cam	1		
4	VKZ3152-00C	Cam Switch	1		
5	SSST2006Z	Screw	2		
6	VKL2375-001	Disc Base	1		
7	VKR4527-001	Helical Gear	1		
8	VKR3001-002	Gear (2)	1		
9	VKR3145-002	Cam Gear	1		
10	VKR4516-001	Gear	1		
11	VKR4519-00A	Reel Disc Ass'y	1		
12	VKZ4003-010	Felt	2		
13	VKS4131-001	Reel Stopper	2		
14	VKR4170-001	Ring	2		
15	VKR4518-00A	Reel Disc Ass'y	1		
16	VKS2188-002	Head Base Cam	1		
17	VKH3004-068	Flange Shaft (A)	1		
18	MMN-6F2RA8Z	D.C. Motor	1	Cam	
19	VKR4528-001	Motor Gear	1		
20	DPSP2608Z	Screw	1	Cam Motor	
21	SPSP2615Z	Screw	1	Cam Motor	
22	MMN-6F4RA88	D.C. Motor	1	Reel	
23	VKR3000-003	Gear (1)	1	Reel Motor	
24	VKS4503-00D	F/R Arm Ass'y	1		
25	SWSP2608Z	Screw	1	Reel Motor	
26	SDSR2610Z	Screw	1		
27	VKF3149-00B	Flywheel	1		
28	VKF4122-00E	Capstan Metal	1		
29	VKZ4035-010	Washer	1		
30	VKW3001-241	Spring	1		
31	VKZ4035-009	Washer	1	Oil Cut	
32	SDST2605Z	Screw	3		
33	VKB3001-036	Belt	1		
34	VKL3721-002	F.M. Bracket	1		
35	VKS4437-001	Thrust Plate	1		
36	SDST2605Z	Screw	4	F.M Bracket	
37	LPSP2614Z	Screw	1	Reel Motor	
38	VKS4901-002	Cassette Guide	2		
39	SDST2606Z	Screw	4		
40	VKL5316-00E	Head Base Arm	1		
41	VKL3421-00B	P. R. Lever Ass'y	1		
42	VKL3685-003	Head Base	1		
43	VKW4467-001	Spring	1		
44	SPSX2011N	Screw	2	E. Head	
45	VKS2123-001	Head Mount Base	1		
46	VKW3001-080	Spring	2		
47	SPSX2012N	Screw	2	Playback Head	
48	VGH0421-020	Playback Head	1		
49	VKS4710-001	Dummy Head	1		
50	T41615-004	Steel Ball	1	Head Base	
51	VKY4425-002	Spring Plate	1		
52	VKP4169-00D	Pinch Roller Ass'y	1		
53	VKW3006-130	Spring	1	Pinch Roller	
54	VKW3006-142	Spring	1		
55	VKL5491-001	Door Safety	1		
56	VKZ4323-001	Screw	1		
57	VKS4512-002	Guide Post	1		
58	SDST2606Z	Screw	1		
59	SBSP2615Z	Screw	1		
60	VKY4279-002	Pack Spring	1		
61	SDST2605Z	Screw	2		
62	REE2000	E. Washer	1		
63	VKW3006-073	Spring	1		
64	VKL5342-003	Hook	1		
65	VKL5501-00A	Bracket	1		
66	SSST2605Z	Screw	2		
67	DN6838A	Holle IC	1		

■ B Mechanism



**■ B Mechanism**

Item	Part Number	Part Name	Q'ty	Description	Areas
1	VKL2387-00A	Chassis Base Ass'y	1		
2	REE2000	E. Washer	1		
3	VKS2186-002	P. Roller Cam	1		
4	VKL5333-00E	Head Lever Ass'y	1		
5	REE1500	E. Washer	1		
6	VKZ3152-00C	Cam Switch Ass'y	1		
7	SSST2006Z	Screw	2		
8	VKL2375-001	Disc Base	1		
9	VKR4527-001	Helical Gear	1		
10	VKR3001-002	Gear (2)	1		
11	VKR3145-002	Cam Gear	1		
12	VKR4516-001	Gear	1		
13	VKR4517-00A	Reel Disc Ass'y	1		
14	VKZ4003-010	Felt	2		
15	VKS4131-001	Reel Stopper	2		
16	VKR4170-001	Ring	2		
17	VKR4518-00A	Reel Disc Ass'y	1		
18	VKS2188-002	Head Base Cam	1		
19	VKH3004-068	Flange Shaft (A)	1		
20	MMN-6F2RA8Z	D.C. Motor	1	Cam	
21	VKR4528-001	Motor Gear	1		
22	DPSP2608Z	Screw	1	Cam Motor	
23	SPSP2615Z	Screw	1	Cam Motor	
24	MMN-6F4RA8B	D.C. Motor	1	Reel	
25	VKR3000-003	Gear (1)	1	Reel Motor	
26	VKS4503-00D	F/R Arm Ass'y	1		
27	SWSP2608Z	Screw	1	Reel Motor	
28	SDSR2610Z	Screw	1		
29	VKF3149-00B	Flywheel	2		
30	VKF4122-00E	Capstan Metal	2		
31	VKZ4035-010	Washer	2		
32	VKW3001-241	Spring	2		
33	VKZ4035-009	Washer	2	Oil Cut	
34	SDST2605Z	Screw	6		
35	VKB3001-038	Belt	1	Capstan	
36	VKL3739-004	F.M. Bracket	1		
37	VKS4437-001	Thrust Plate	2		
38	SHU2L52	D.C. Motor	1		
39	VKR4525-001	Pulley	1		
40	SSSP2604Z	Screw	2	Capstan Motor	
41	SDST2605Z	Screw	4	F. Bracket	
42	LPSP2614Z	Screw	1	Reel Motor	
43	VKS4901-002	Cassette Guide	2		
44	SDST2606Z	Screw	4		
45	VKL5316-00E	Head Base Arm	1		
46	VKL5318-003	Head Arm	1		
47	VKL3413-00D	P.R. Lever Ass'y	1		
48	VKL3683-003	Head Base	1		
49	VKW4467-004	Spring	1		
50	KPSP2004Z	SCrew	2		
51	VKS3349-00B	Head Mount Base	1		
52	VKZ4271-002	Wire Stopper	1		
53	VKZ4514-001	Screw	2		
54	VGH0425-536	Playback Head	1		
55	VKZ4291-003	Head Screw	2		
56	T41615-004	Steel Ball	1	Head Base	
57	VKY4425-002	Spring Plate	1		
58	VKP4169-00D	P. Roller Ass'y	1		
59	VKW3006-130	Spring	1	Right Pinch Roller	
60	VKW3006-057	Spring	1		

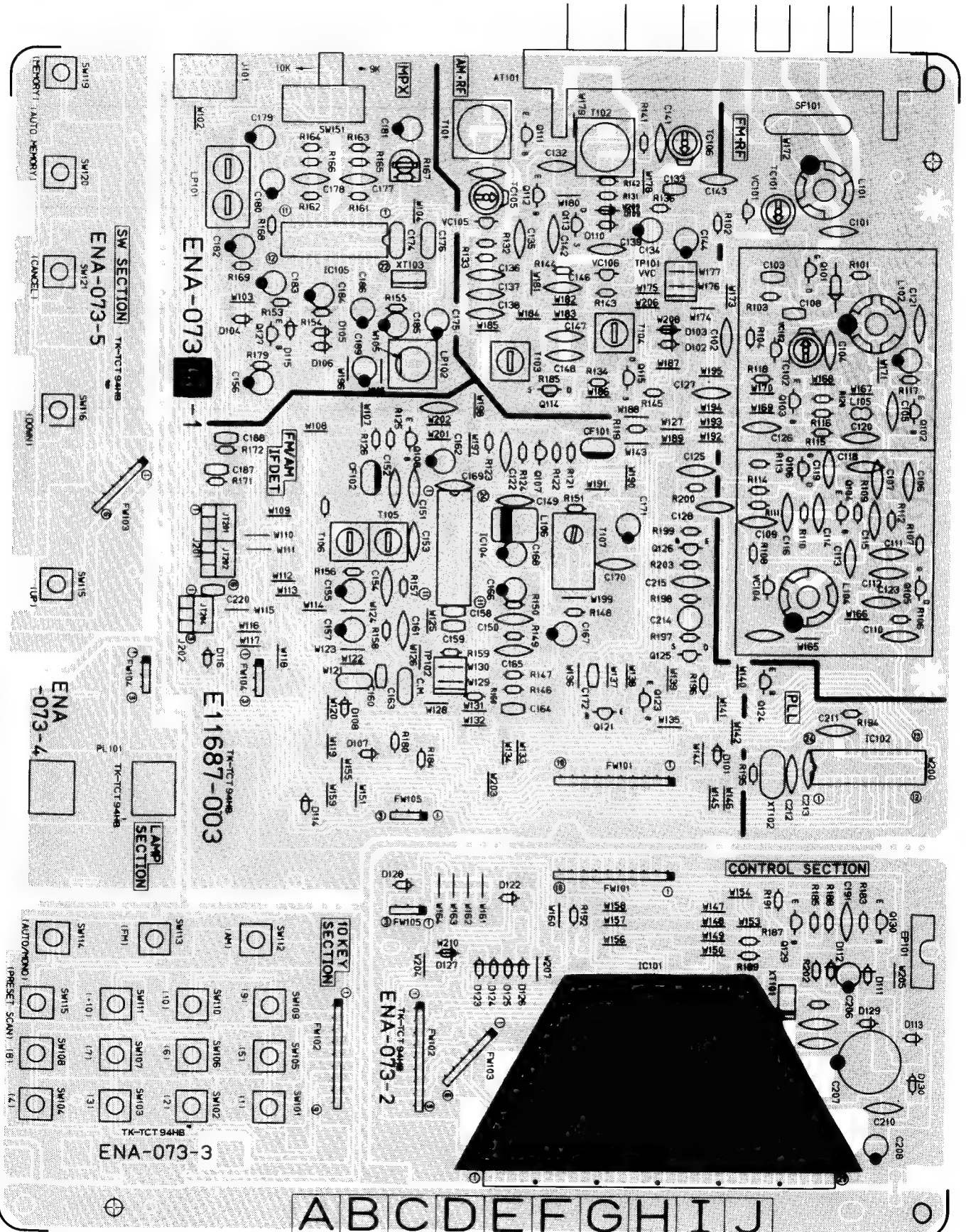


Item	Part Number	Part Name	Q'ty	Description	Areas
61	VKP4171-00D	Pinch Roller Ass'y	1	Left Pinch Roller	
62	VKW3006-131	Spring	1		
63	VKW3006-143	Spring	1		
64	VKL5492-002	Door Safety	1		
65	VKZ4323-001	Screw	1		
66	VKS4512-002	Guide Post	1		
67	SDST2606Z	Screw	1		
68	SBSP2615Z	Screw	1		
69	VKY4279-002	Pack Spring	1		
70	SDST2605Z	Screw	2		
71	REE2000	E. Washer	1		
72	VKW3006-074	Spring	1		
73	VKL5345-003	Hook	1		
74	VKL5500-00B	Bracket	1		
75	SSST2605Z	Screw	2		
76	VKL5948-001	Bracket (2)	1		
77	SDST2605Z	Screw	4		
78	VKL5964-001	Bracket (3)	1		
79	SDST2605Z	Screw	2		
80	VKL6088-001	Joint Bracket	1		
81	VKL3827-002	Bracket (1)	1		
82	VKH5924-002	Spring	1		
83	SDST2605Z	Screw	8		
84	DN6838A	Holle IC	1		

# Printed Circuit Board Ass'y and Parts List

■ ENA-073 □ Tuner PC Board Ass'y

Note: Varies according to the areas employed. See note (1) when placing an order.



## Note (1)

PC Board Ass'y	Designated Areas
ENA-073 <b>C</b>	U.S. Military Market & Other Countries
ENA-073 <b>D</b>	Australia
ENA-073 <b>E</b>	Continental Europe (with LW)
ENA-073 <b>F</b>	West Germany (with LW)
ENA-073 <b>G</b>	U.K. (with LW)
ENA-073 <b>J</b>	Switzer Land (with LW)

## TRANSISTORS

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
Q101	2SK606(Q,R)	F.E.T	MATSUSHITA
Q102	2SC535(C)	SILICON	HITACHI
Q103	2SC461(B,C)	SILICON	HITACHI
Q104	2SC461(C)	SILICON	HITACHI
Q105	2SK606(Q,R)	F.E.T	MATSUSHITA
Q106	2SK606(Q,R)	F.E.T	MATSUSHITA
Q107	2SC535(B,C)	SILICON	HITACHI
Q108	2SC461(B,C)	SILICON	HITACHI
Q111	2SD1302(S,T)	SILICON	MATSUSHITA
Q111	2SD1302(S,T)	SILICON	MATSUSHITA
Q111	2SD1302(S,T)	SILICON	MATSUSHITA
Q111	2SD1302(S,T)	SILICON	MATSUSHITA
Q112	2SK301(Q,R)	F.E.T	MATSUSHITA
Q113	2SK301(Q,R)	F.E.T	MATSUSHITA
Q113	2SK301(Q,R)	F.E.T	MATSUSHITA
Q113	2SK301(Q,R)	F.E.T	MATSUSHITA
Q113	2SK301(Q,R)	F.E.T	MATSUSHITA
Q114	2SK301(P,Q)	F.E.T	MATSUSHITA
Q114	2SK301(P,Q)	F.E.T	MATSUSHITA
Q114	2SK301(P,Q)	F.E.T	MATSUSHITA
Q114	2SK301(P,Q)	F.E.T	MATSUSHITA
Q114	2SK301(P,Q)	F.E.T	MATSUSHITA
Q115	2SK301(P,Q)	F.E.T	MATSUSHITA
Q115	2SK301(P,Q)	F.E.T	MATSUSHITA
Q115	2SK301(P,Q)	F.E.T	MATSUSHITA
Q115	2SK301(P,Q)	F.E.T	MATSUSHITA
Q115	2SK301(P,Q)	F.E.T	MATSUSHITA
Q121	DTA114YS	SILICON	ROHM
Q121	DTA114YS	SILICON	ROHM
Q121	DTA114YS	SILICON	ROHM
Q121	DTA114YS	SILICON	ROHM
Q121	DTA114YS	SILICON	ROHM
Q123	DTA114YS	SILICON	ROHM
Q124	DTA114YS	SILICON	ROHM
Q125	2SK301(Q2)	F.E.T	MATSUSHITA
Q126	2SC458(D)	SILICON	HITACHI
Q127	DTC144ES	SILICON	ROHM
Q129	2SC1685(R,S)	SILICON	MATSUSHITA
Q130	2SC1685(R,S)	SILICON	MATSUSHITA

## I. C. S

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
IC101	TC9306F-028BS	I.C.	TOSHIBA
IC102	LC7217	I.C.	SANYO
IC104	LA1266A	I.C.	SANYO
IC105	LA3401	I.C.	SANYO

## DIODES

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
D101	1SS119	SILICON	HITACHI
D102	1SS119	SILICON	HITACHI
D102	1SS119	SILICON	HITACHI
D102	1SS119	SILICON	HITACHI
D102	1SS119	SILICON	HITACHI
D102	1SS119	SILICON	HITACHI
D103	1SS119	SILICON	HITACHI
D103	1SS119	SILICON	HITACHI
D103	1SS119	SILICON	HITACHI
D103	1SS119	SILICON	HITACHI
D103	1SS119	SILICON	HITACHI
D103	1SS119	SILICON	HITACHI
D104	1SS119	SILICON	HITACHI
D105	1SS119	SILICON	HITACHI
D106	1SS119	SILICON	HITACHI
D107	1SS119	SILICON	HITACHI
D108	1SS119	SILICON	HITACHI
D109	1SS119	SILICON	HITACHI
D109	1SS119	SILICON	HITACHI
D109	1SS119	SILICON	HITACHI
D109	1SS119	SILICON	HITACHI
D109	1SS119	SILICON	HITACHI
D110	1SS119	SILICON	HITACHI
D110	1SS119	SILICON	HITACHI
D110	1SS119	SILICON	HITACHI
D110	1SS119	SILICON	HITACHI
D110	1SS119	SILICON	HITACHI
D111	1SS119	SILICON	HITACHI
D112	1SS119	SILICON	HITACHI
D113	1SS119	SILICON	HITACHI
D114	1SS119	SILICON	HITACHI
D115	1SS119	SILICON	HITACHI
D116	1SS119	SILICON	HITACHI
D122	1SS119	SILICON	HITACHI
D123	1SS119	SILICON	HITACHI
D123	1SS119	SILICON	HITACHI
D123	1SS119	SILICON	HITACHI
D123	1SS119	SILICON	HITACHI
D124	1SS119	SILICON	HITACHI
D124	1SS119	SILICON	HITACHI
D124	1SS119	SILICON	HITACHI
D124	1SS119	SILICON	HITACHI
D124	1SS119	SILICON	HITACHI
D127	1SS119	SILICON	HITACHI
D128	1SS119	SILICON	HITACHI
D129	1SS119	SILICON	HITACHI
D130	1SS119	SILICON	HITACHI
VC101	SVC202(AB)	VARICAP	SANYO
VC102	SVC202(AB)	VARICAP	SANYO
VC104	SVC202(AB)	VARICAP	SANYO
VC105	SVC342(L)	VARICAP	SANYO
VC106	SVC342(L)	VARICAP	SANYO
VC106	SVC342(L)	VARICAP	SANYO
VC106	SVC342(L)	VARICAP	SANYO
VC106	SVC342(L)	VARICAP	SANYO
VC106	SVC342(L)	VARICAP	SANYO

## CAPACITORS

ITEM	PART NUMBER	DESCRIPTION	AREA
C102	QCF21HP-103	0.01MF 50V	CERAMIC
C103	QCVB1CM-103	0.01MF 16V	CERAMIC
C104	QCS21HJ-5R0	5PF 50V	CERAMIC
C105	QCT30CH-3R3	33PF 50V	CERAMIC
C106	QCS21HJ-2R0	2PF 50V	CERAMIC
C107	QCS21HJ-4R0	4PF 50V	CERAMIC
C107	QCS21HJ-4R0	4PF 50V	CERAMIC
C107	QCS21HJ-4R0	4PF 50V	CERAMIC
C107	QCS21HJ-4R0	4PF 50V	CERAMIC
C107	QCS21HJ-4R0	4PF 50V	CERAMIC
C107	QCS21HJ-4R0	4PF 50V	CERAMIC
C108	QCVB1CM-103	0.01MF 16V	CERAMIC
C109	QCF21HP-103	0.01MF 50V	CERAMIC
C110	QCVB1CM-103	0.01MF 16V	CERAMIC
C111	QCT26CH-2R0	2PF 50V	CERAMIC
C112	QCT26TH-7R0	7PF 50V	CERAMIC
C113	QCT26CH-7R0	7PF 50V	CERAMIC
C114	QCT26CH-220	22PF 50V	CERAMIC
C115	QCT26CH-100	10PF 50V	CERAMIC
C116	QCF21HP-103	0.01MF 50V	CERAMIC

Δ : SAFETY PARTS

## RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R131	QRD167J-331	330	1/6W	CARBON	
	R132	QRD167J-103	10K	1/6W	CARBON	
	R133	QRD167J-473	47K	1/6W	CARBON	
	R134	QRD167J-103	10K	1/6W	CARBON	E
	R134	QRD167J-103	10K	1/6W	CARBON	F
	R134	QRD167J-103	10K	1/6W	CARBON	G
	R134	QRD167J-103	10K	1/6W	CARBON	H
	R134	QRD167J-103	10K	1/6W	CARBON	J
	R135	QRD167J-470	47	1/6W	CARBON	C
	R135	QRD167J-470	47	1/6W	CARBON	D
	R136	QRD167J-103	10K	1/6W	CARBON	
	R141	QRD167J-472	4.7K	1/6W	CARBON	E
	R141	QRD167J-472	4.7K	1/6W	CARBON	F
	R141	QRD167J-472	4.7K	1/6W	CARBON	G
	R141	QRD167J-472	4.7K	1/6W	CARBON	H
	R141	QRD167J-472	4.7K	1/6W	CARBON	J
	R142	QRD167J-331	330	1/6W	CARBON	E
	R142	QRD167J-331	330	1/6W	CARBON	F
	R142	QRD167J-331	330	1/6W	CARBON	G
	R142	QRD167J-331	330	1/6W	CARBON	H
	R142	QRD167J-331	330	1/6W	CARBON	J
	R143	QRD167J-103	10K	1/6W	CARBON	E
	R143	QRD167J-103	10K	1/6W	CARBON	F
	R143	QRD167J-103	10K	1/6W	CARBON	G
	R143	QRD167J-103	10K	1/6W	CARBON	H
	R143	QRD167J-103	10K	1/6W	CARBON	J
	R144	QRD167J-473	47K	1/6W	CARBON	E
	R144	QRD167J-473	47K	1/6W	CARBON	F
	R144	QRD167J-473	47K	1/6W	CARBON	G
	R144	QRD167J-473	47K	1/6W	CARBON	H
	R144	QRD167J-473	47K	1/6W	CARBON	J
	R145	QRD167J-103	10K	1/6W	CARBON	E
	R145	QRD167J-103	10K	1/6W	CARBON	F
	R145	QRD167J-103	10K	1/6W	CARBON	G
	R145	QRD167J-103	10K	1/6W	CARBON	H
	R145	QRD167J-103	10K	1/6W	CARBON	J
	R146	QRD167J-560	56	1/6W	CARBON	
	R147	QRD167J-103	10K	1/6W	CARBON	
	R148	QRD167J-103	10K	1/6W	CARBON	
	R149	QRD167J-223	22K	1/6W	CARBON	
	R150	QRD167J-273	27K	1/6W	CARBON	
	R151	QRD167J-224	220K	1/6W	CARBON	
	R153	QRD167J-103	10K	1/6W	CARBON	
	R154	QRD167J-103	10K	1/6W	CARBON	
	R155	QRD167J-562	5.6K	1/6W	CARBON	
	R156	QRD167J-822	8.2K	1/6W	CARBON	
	R157	QRD167J-102	1K	1/6W	CARBON	
	R158	QRD167J-333	33K	1/6W	CARBON	
	R159	QRD167J-561	560	1/6W	CARBON	
	R160	QRD167J-123	12K	1/6W	CARBON	C
	R160	QRD167J-123	12K	1/6W	CARBON	D
	R160	QRD167J-123	12K	1/6W	CARBON	F
	R160	QRD167J-273	27K	1/6W	CARBON	E
	R160	QRD167J-273	27K	1/6W	CARBON	G
	R160	QRD167J-273	27K	1/6W	CARBON	H
	R161	QRD167J-124	120K	1/6W	CARBON	J
	R161	QRD167J-184	180K	1/6W	CARBON	D
	R161	QRD167J-184	180K	1/6W	CARBON	E
	R161	QRD167J-184	180K	1/6W	CARBON	F
	R161	QRD167J-184	180K	1/6W	CARBON	G
	R161	QRD167J-184	180K	1/6W	CARBON	H
	R161	QRD167J-184	180K	1/6W	CARBON	J
	R162	QRD167J-124	120K	1/6W	CARBON	C
	R162	QRD167J-184	180K	1/6W	CARBON	D
	R162	QRD167J-184	180K	1/6W	CARBON	E
	R162	QRD167J-184	180K	1/6W	CARBON	F
	R162	QRD167J-184	180K	1/6W	CARBON	G
	R162	QRD167J-184	180K	1/6W	CARBON	H
	R162	QRD167J-184	180K	1/6W	CARBON	J
	R163	QRD167J-332	3.3K	1/6W	CARBON	
	R164	QRD167J-332	3.3K	1/6W	CARBON	
	R165	QRD167J-184	180K	1/6W	CARBON	C
	R165	QRD167J-274	270K	1/6W	CARBON	D
	R165	QRD167J-274	270K	1/6W	CARBON	E
	R165	QRD167J-274	270K	1/6W	CARBON	F
	R165	QRD167J-274	270K	1/6W	CARBON	G
	R165	QRD167J-274	270K	1/6W	CARBON	H
	R165	QRD167J-274	270K	1/6W	CARBON	J
	R166	QRD167J-184	180K	1/6W	CARBON	C
	R166	QRD167J-274	270K	1/6W	CARBON	D
	R166	QRD167J-274	270K	1/6W	CARBON	E
	R166	QRD167J-274	270K	1/6W	CARBON	F
	R166	QRD167J-274	270K	1/6W	CARBON	G
	R166	QRD167J-274	270K	1/6W	CARBON	H

## RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R166	QRD167J-274	270K	1/6W	CARBON	J
	R167	QRD167J-393	39K	1/6W	CARBON	C
	R167	QVZ3518-104	100K	0.1W	VARIABLE	D
	R167	QVZ3518-104	100K	0.1W	VARIABLE	E
	R167	QVZ3518-104	100K	0.1W	VARIABLE	F
	R167	QVZ3518-104	100K	0.1W	VARIABLE	G
	R167	QVZ3518-104	100K	0.1W	VARIABLE	H
	R167	QVZ3518-104	100K	0.1W	VARIABLE	J
	R168	QRD167J-103	10K	1/6W	CARBON	
	R169	QRD167J-103	10K	1/6W	CARBON	
	R171	QRD167J-682	6.8K	1/6W	CARBON	
	R172	QRD167J-682	6.8K	1/6W	CARBON	
	R179	QRD167J-562	5.6K	1/6W	CARBON	
	R180	QRD167J-472	4.7K	1/6W	CARBON	
	R183	QRD167J-223	22K	1/6W	CARBON	
	R184	QRD167J-472	4.7K	1/6W	CARBON	
	R185	QRD167J-473	47K	1/6W	CARBON	
	R187	QRD167J-101	100	1/6W	CARBON	
	R188	QRD167J-103	10K	1/6W	CARBON	
	R189	QRD167J-103	10K	1/6W	CARBON	
	R191	QRD167J-332	3.3K	1/6W	CARBON	
	R192	QRD167J-103	10K	1/6W	CARBON	
	R194	QRD167J-472	4.7K	1/6W	CARBON	
	R195	QRD167J-473	47K	1/6W	CARBON	
	R196	QRD167J-103	10K	1/6W	CARBON	C
	R196	QRD167J-103	10K	1/6W	CARBON	D
	R196	QRD167J-222	2.2K	1/6W	CARBON	E
	R196	QRD167J-222	2.2K	1/6W	CARBON	F
	R196	QRD167J-222	2.2K	1/6W	CARBON	G
	R196	QRD167J-222	2.2K	1/6W	CARBON	H
	R196	QRD167J-222	2.2K	1/6W	CARBON	J
	R197	QRD167J-222	2.2K	1/6W	CARBON	
	R198	QRD167J-332	3.3K	1/6W	CARBON	C
	R198	QRD167J-332	3.3K	1/6W	CARBON	D
	R198	QRD167J-822	8.2K	1/6W	CARBON	E
	R198	QRD167J-822	8.2K	1/6W	CARBON	F
	R198	QRD167J-822	8.2K	1/6W	CARBON	G
	R198	QRD167J-822	8.2K	1/6W	CARBON	H
	R198	QRD167J-822	8.2K	1/6W	CARBON	J
	R199	QRD167J-472	4.7K	1/6W	CARBON	
	R200	QRD167J-222	2.2K	1/6W	CARBON	
	R202	QRD167J-472	4.7K	1/6W	CARBON	
	R203	QRD167J-181	180	1/6W	CARBON	

## OTHERS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
		E11687-003	CIRCUIT BOARD			
		E304180-001	SHIELD CASE			
		E73297-001	SHIELD CASE			F
	L101	EQR2306-014	FM RF COIL			C
	L101	EQR2306-014	FM RF COIL			D
	L101	EQR2306-014	FM RF COIL			E
	L101	EQR2306-014	FM RF COIL			F
	L101	EQR2306-016	FM RF COIL			G
	L101	EQR2306-016	FM RF COIL			H
	L101	EQR2306-016	FM RF COIL			J
	L102	EQR2106-014	RF COIL			
	L104	EQR2406-004	FM OSC COIL			
	L105	EQL4004-1R5	INDUCTOR			
	L106	EQL3001-102K	INDUCTOR			
	T101	EQR1111-006	AM RF COIL			
	T102	EQR1111-005	AM RF COIL			E
	T102	EQR1111-005	AM RF COIL			F
	T102	EQR1111-005	AM RF COIL			G
	T102	EQR1111-005	AM RF COIL			H
	T102	EQR1111-005	AM RF COIL			J
	T103	EQR1207-015	MW OSC COIL			
	T104	EQR1307-009	LW OSC COIL			E
	T104	EQR1307-009	LW OSC COIL			F
	T104	EQR1307-009	LW OSC COIL			G
	T104	EQR1307-009	LW OSC COIL			H
	T104	EQR1307-009	LW OSC COIL			J
	T105	EQT2140-012	I.F. TRANSFORMER			
	T106	EQT2140-013	I.F. TRANSFORMER			
	T107	ECB1560-006	CERAMIC FILTER			
	AT101	EMB41YV-301K	ANTENNA TERMINAL			F
	AT101	EMB41YV-301K	ANTENNA TERMINAL			H
	AT101	EMB41YV-301K	ANTENNA TERMINAL			J
	AT101	EMB41YV-401K	ANTENNA TERMINAL			C
	AT101	EMB41YV-401K	ANTENNA TERMINAL			D
	AT101	EMB41YV-401K	ANTENNA TERMINAL			E

△ : SAFETY PARTS

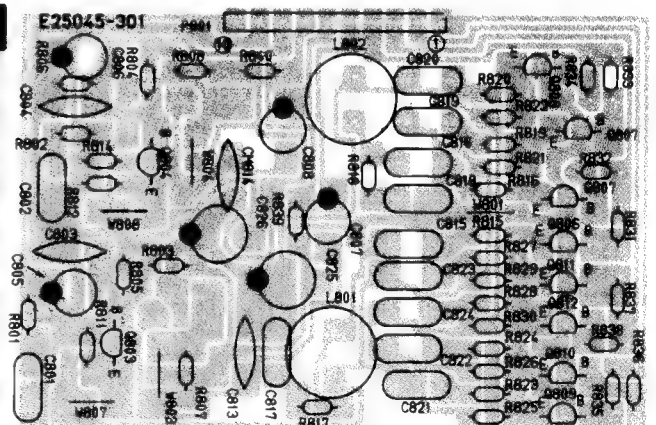
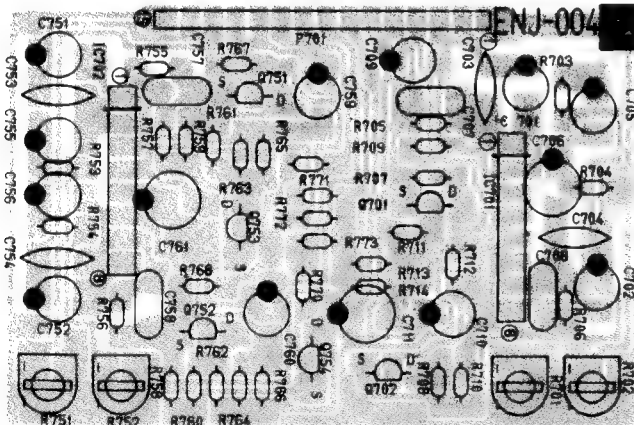
# OTHERS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	AT101	EMB41YV-401K	ANTENNA TERMINAL	G
	CF101	ECB2118-001R	CERAMIC FILTER	E
	CF101	ECB2118-001R	CERAMIC FILTER	F
	CF101	ECB2118-001R	CERAMIC FILTER	G
	CF101	ECB2118-001R	CERAMIC FILTER	H
	CF101	ECB2118-001R	CERAMIC FILTER	J
	CF101	ECB2123-001R	CERAMIC FILTER	C
	CF101	ECB2123-001R	CERAMIC FILTER	D
	CF102	ECB2118-001R	CERAMIC FILTER	E
	CF102	ECB2118-001R	CERAMIC FILTER	F
	CF102	ECB2118-001R	CERAMIC FILTER	G
	CF102	ECB2118-001R	CERAMIC FILTER	H
	CF102	ECB2118-001R	CERAMIC FILTER	J
	CF102	ECB2123-001R	CERAMIC FILTER	C
	CF102	ECB2123-001R	CERAMIC FILTER	D
	FC101	E45524-002	FUSE CLIP	
	FC102	E45524-002	FUSE CLIP	
	FW101	EW338B-16SST	FLAT WIRE	
	FW102	EW338B-16SST	FLAT WIRE	
	FW103	EW338B-25SST	FLAT WIRE	
	FW104	EW338B-16SST	FLAT WIRE	
	FW105	EW338B-16SST	FLAT WIRE	C
	J 101	QMS3533-001	MINI JACK	
	JT201	EMV7122-003Z	CONNECTOR	
	JT202	EMV7122-003Z	CONNECTOR	
	JT204	EMV7122-003Z	CONNECTOR	
	LC101	ELU0002-051	LCD PANEL	
	LP101	EQF0101-002	LOW PASS FILTER	
	LP102	EQF0102-001	LOW PASS FILTER	F
	SF101	EQF0201-006	BAND PASS FILTER	F

# OTHERS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	SW101	ESP0001-018	TACT SWITCH	
	SW102	ESP0001-018	TACT SWITCH	
	SW103	ESP0001-018	TACT SWITCH	
	SW104	ESP0001-018	TACT SWITCH	
	SW105	ESP0001-018	TACT SWITCH	
	SW106	ESP0001-018	TACT SWITCH	
	SW107	ESP0001-018	TACT SWITCH	
	SW108	ESP0001-018	TACT SWITCH	
	SW109	ESP0001-018	TACT SWITCH	
	SW110	ESP0001-018	TACT SWITCH	
	SW111	ESP0001-018	TACT SWITCH	
	SW112	ESP0001-018	TACT SWITCH	
	SW113	ESP0001-018	TACT SWITCH	
	SW114	ESP0001-018	TACT SWITCH	
	SW115	ESP0001-018	TACT SWITCH	
	SW116	ESP0001-018	TACT SWITCH	
	SW117	ESP0001-018	TACT SWITCH	
	SW119	ESP0001-018	TACT SWITCH	
	SW120	ESP0001-018	TACT SWITCH	
	SW121	ESP0001-018	TACT SWITCH	
	SW151	QSS1201-039	SLIDE SWITCH	
	XT101	ECX0072-000EM	RESONATOR	C
	XT102	ECX0007-200KF	RESONATOR	
	XT103	ECX0000-456KR	RESONATOR	

## ■ ENJ-004 [E] Equalizer PC Board Ass'y



# TRANSISTORS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
			MAKER	
	Q701	2SK301(P,Q)	F.E.T	MATSUSHITA
	Q702	2SK301(P,Q)	F.E.T	MATSUSHITA
	Q751	2SK301(P,Q)	F.E.T	MATSUSHITA
	Q752	2SK301(P,Q)	F.E.T	MATSUSHITA
	Q753	2SK301(P,Q)	F.E.T	MATSUSHITA
	Q754	2SK301(P,Q)	F.E.T	MATSUSHITA
	Q803	2SC1740LN(R,S)	SILICON	ROHM
	Q804	2SC1740LN(R,S)	SILICON	ROHM
	Q805	2SC1685(Q,R)	SILICON	MATSUSHITA
	Q806	2SC1685(Q,R)	SILICON	MATSUSHITA
	Q807	2SC1685(Q,R)	SILICON	MATSUSHITA
	Q808	2SC1685(Q,R)	SILICON	MATSUSHITA
	Q809	2SC1685(Q,R)	SILICON	MATSUSHITA
	Q810	2SC1685(Q,R)	SILICON	MATSUSHITA
	Q811	2SC1685(Q,R)	SILICON	MATSUSHITA
	Q812	2SC1685(Q,R)	SILICON	MATSUSHITA

# I. C. S

△	ITEM	PART NUMBER	DESCRIPTION	AREA
			MAKER	
	IC701	M51522L	I.C.	MITSUBISHI
	IC702	M51522L	I.C.	MITSUBISHI

# CAPACITORS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
	C701	QEK61HM-225G	2.2MF 50V	ELECTRO
	C702	QEK61HM-225G	2.2MF 50V	ELECTRO
	C703	QCS21HJ-101	100PF 50V	CERAMIC
	C704	QCS21HJ-101	100PF 50V	CERAMIC
	C705	QEK61CM-107	100MF 16V	ELECTRO
	C706	QEK61CM-107	100MF 16V	ELECTRO
	C707	QFN81HJ-822	8200PF 50V	MYLAR
	C708	QFN81HJ-822	8200PF 50V	MYLAR
	C709	QEK61HM-105G	1MF 50V	ELECTRO
	C710	QEK61HM-105G	1MF 50V	ELECTRO

△ : SAFETY PARTS



## CAPACITORS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	C711	QEK61CM-107	100MF	16V	ELECTRO	
	C751	QEK61HM-225G	2.2MF	50V	ELECTRO	
	C752	QEK61HM-225G	2.2MF	50V	ELECTRO	
	C753	QCS21HJ-101	100PF	50V	CERAMIC	
	C754	QCS21HJ-101	100PF	50V	CERAMIC	
	C755	QETB1AM-107	100MF	10V	ELECTRO	
	C756	QETB1AM-107	100MF	10V	ELECTRO	
	C757	QFN81HJ-822	8200PF	50V	MYLAR	
	C758	QFN81HJ-822	8200PF	50V	MYLAR	
	C759	QEK61HM-105G	1MF	50V	ELECTRO	
	C760	QEK61HM-105G	1MF	50V	ELECTRO	
	C761	QEK61CM-107	100MF	16V	ELECTRO	
	C801	QCF21HP-473	0.047MF	50V	CERAMIC	
	C802	QCF21HP-473	0.047MF	50V	CERAMIC	
	C803	QCS21HJ-151	150PF	50V	CERAMIC	
	C804	QCS21HJ-151	150PF	50V	CERAMIC	
	C805	QETB1HM-225	2.2MF	50V	ELECTRO	
	C806	QETB1HM-225	2.2MF	50V	ELECTRO	
	C807	QEK61HM-225G	2.2MF	50V	ELECTRO	
	C808	QEK61HM-225G	2.2MF	50V	ELECTRO	
	C811	QEK61CM-106G	10MF	16V	ELECTRO	
	C812	QEK61CM-106G	10MF	16V	ELECTRO	
	C813	QCS21HJ-271	270PF	50V	CERAMIC	
	C814	QCS21HJ-271	270PF	50V	CERAMIC	
	C815	QFN81HJ-822	8200PF	50V	MYLAR	
	C816	QFN81HJ-822	8200PF	50V	MYLAR	
	C817	QFN81HJ-392	3900PF	50V	MYLAR	
	C818	QFN81HJ-392	3900PF	50V	MYLAR	
	C819	QFN81HJ-123	0.012MF	50V	MYLAR	
	C820	QFN81HJ-123	0.012MF	50V	MYLAR	
	C821	QFN81HJ-332	3300PF	50V	MYLAR	
	C822	QFN81HJ-332	3300PF	50V	MYLAR	
	C823	QFN81HJ-103	0.01MF	50V	MYLAR	
	C824	QFN81HJ-103	0.01MF	50V	MYLAR	
	C825	QEK61CM-107	100MF	16V	ELECTRO	
	C826	QEK61CM-107	100MF	16V	ELECTRO	

## RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R701	QVZ3518-221	220	0.1W	VARIABLE	
	R702	QVZ3518-221	220	0.1W	VARIABLE	
	R703	QRD167J-101	100	1/6W	CARBON	
	R704	QRD167J-101	100	1/6W	CARBON	
	R705	QRD167J-334	330K	1/6W	CARBON	
	R706	QRD167J-334	330K	1/6W	CARBON	
	R707	QRD167J-682	6.8K	1/6W	CARBON	
	R708	QRD167J-682	6.8K	1/6W	CARBON	
	R709	QRD167J-822	8.2K	1/6W	CARBON	
	R710	QRD167J-822	8.2K	1/6W	CARBON	
	R711	QRD167J-105	1M	1/6W	CARBON	
	R712	QRD167J-105	1M	1/6W	CARBON	
	R713	QRD167J-472	4.7K	1/6W	CARBON	
	R714	QRD167J-471	470	1/6W	CARBON	
	R751	QVZ3518-221	220	0.1W	VARIABLE	
	R752	QVZ3518-221	220	0.1W	VARIABLE	
	R753	QRD167J-101	100	1/6W	CARBON	
	R754	QRD167J-101	100	1/6W	CARBON	
	R755	QRD167J-334	330K	1/6W	CARBON	
	R756	QRD167J-334	330K	1/6W	CARBON	
	R757	QRD167J-432	4.3K	1/6W	CARBON	
	R758	QRD167J-432	4.3K	1/6W	CARBON	
	R759	QRD167J-272	2.7K	1/6W	CARBON	
	R760	QRD167J-272	2.7K	1/6W	CARBON	
	R761	QRD167J-512	5.1K	1/6W	CARBON	
	R762	QRD167J-512	5.1K	1/6W	CARBON	
	R763	QRD167J-332	3.3K	1/6W	CARBON	
	R764	QRD167J-332	3.3K	1/6W	CARBON	
	R765	QRD167J-223	22K	1/6W	CARBON	
	R766	QRD167J-223	22K	1/6W	CARBON	
	R767	QRD167J-105	1M	1/6W	CARBON	
	R768	QRD167J-105	1M	1/6W	CARBON	
	R769	QRD167J-105	1M	1/6W	CARBON	
	R770	QRD167J-105	1M	1/6W	CARBON	
	R771	QRD167J-471	470	1/6W	CARBON	
	R772	QRD167J-472	4.7K	1/6W	CARBON	
	R773	QRD167J-472	4.7K	1/6W	CARBON	
	R801	QRD167J-333	33K	1/6W	CARBON	
	R802	QRD167J-333	33K	1/6W	CARBON	
	R803	QRD167J-474	470K	1/6W	CARBON	

## RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R804	QRD167J-474	470K	1/6W	CARBON	
	R805	QRD167J-683	68K	1/6W	CARBON	
	R806	QRD167J-683	68K	1/6W	CARBON	
	R807	QRD167J-153	15K	1/6W	CARBON	
	R808	QRD167J-153	15K	1/6W	CARBON	
	R811	QRD167J-182	1.8K	1/6W	CARBON	
	R812	QRD167J-182	1.8K	1/6W	CARBON	
	R815	QRD167J-101	100	1/6W	CARBON	
	R816	QRD167J-101	100	1/6W	CARBON	
	R817	QRD167J-330	33	1/6W	CARBON	
	R818	QRD167J-330	33	1/6W	CARBON	
	R819	QRD167J-222	2.2K	1/6W	CARBON	
	R820	QRD167J-222	2.2K	1/6W	CARBON	
	R821	QRD167J-332	3.3K	1/6W	CARBON	
	R822	QRD167J-332	3.3K	1/6W	CARBON	
	R823	QRD167J-221	220	1/6W	CARBON	
	R824	QRD167J-221	220	1/6W	CARBON	
	R825	QRD167J-104	100K	1/6W	CARBON	
	R826	QRD167J-104	100K	1/6W	CARBON	
	R827	QRD167J-221	220	1/6W	CARBON	
	R828	QRD167J-221	220	1/6W	CARBON	
	R829	QRD167J-332	3.3K	1/6W	CARBON	
	R830	QRD167J-332	3.3K	1/6W	CARBON	
	R831	QRD167J-473	47K	1/6W	CARBON	
	R832	QRD167J-473	47K	1/6W	CARBON	
	R833	QRD167J-473	47K	1/6W	CARBON	
	R834	QRD167J-473	47K	1/6W	CARBON	
	R835	QRD167J-473	47K	1/6W	CARBON	
	R836	QRD167J-473	47K	1/6W	CARBON	
	R837	QRD167J-473	47K	1/6W	CARBON	
	R838	QRD167J-473	47K	1/6W	CARBON	
	R839	QRD167J-101	100	1/6W	CARBON	
	R840	QRD167J-101	100	1/6W	CARBON	

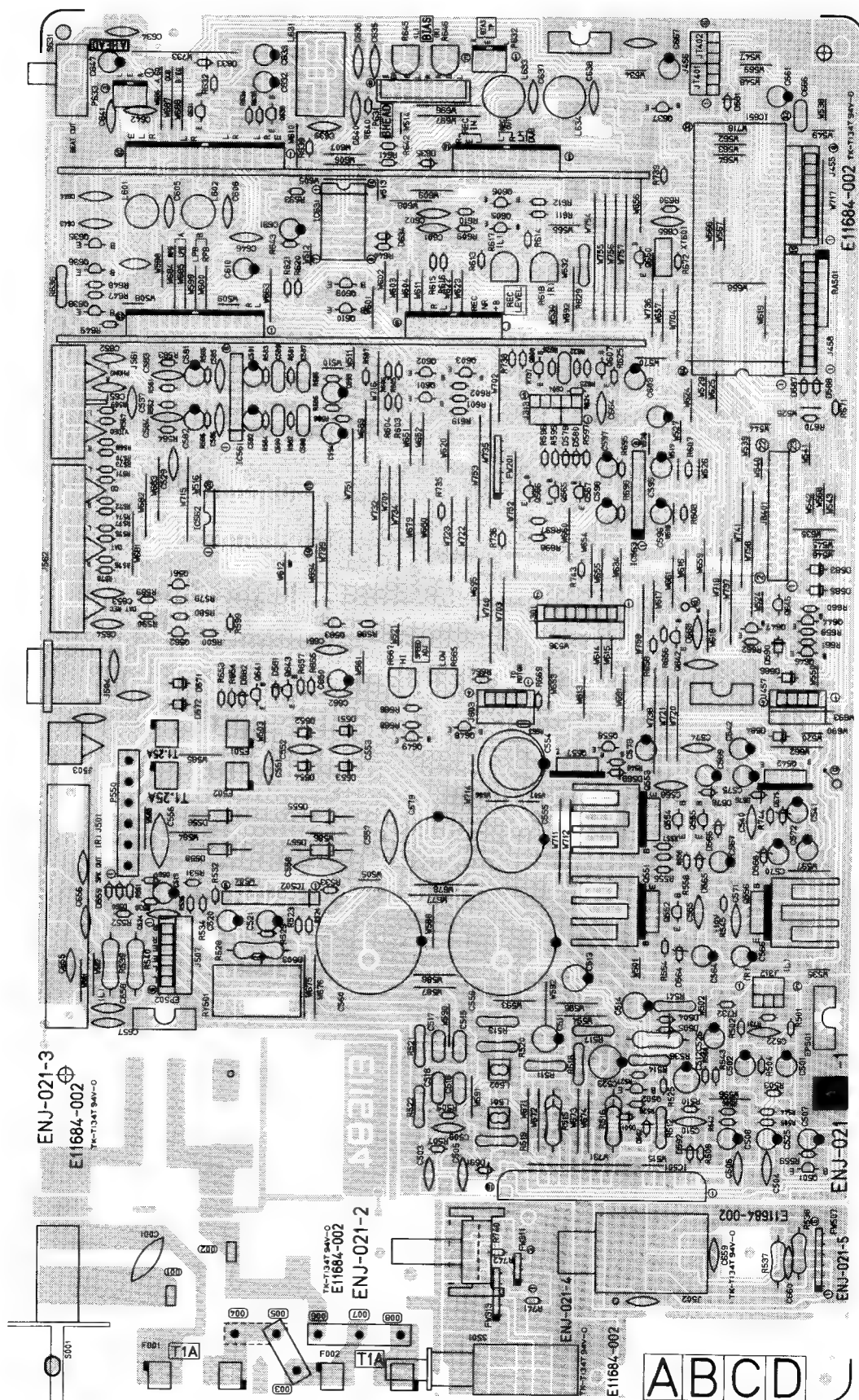
## OTHERS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
		E25045-301	CIRCUIT BOARD			E
	L801	EQL2106-562	INDUCTOR			
	L802	EQL2106-562	INDUCTOR			
	P701	EMV5101-015B	PLUG ASSY			
	P801	EMV5101-010B	PLUG ASSY			

△ : SAFETY PARTS

■ ENJ-021 □ Power Amplifier PC Board Ass'y

Note: ENJ-021 □ Varies according to the areas employed. See note (1) when placing an order.



## Note (1)

PC Board Ass'y	Designated Areas
ENJ-021 <b>C</b>	U.S. Military Market & Other Countries
ENJ-021 <b>D</b> BS	U.K. (with LW)
ENJ-021 <b>E</b>	Australia, Switzer Land (with LW) Continental Europe (with LW)
ENJ-021 <b>F</b>	West Germany (with LW)

## TRANSISTORS

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
Q501	2SK301(P,Q)	F.E.T	MATSUSHITA
Q502	2SC1741A(Q,R)	SILICON	ROHM
Q542	2SD1913(R,S)	SILICON	SANYO
Q551	2SD1666(R,S)	SILICON	SANYO
Q552	2SC1685(Q,R)	SILICON	MATSUSHITA
Q553	2SB941A(P,Q)	SILICON	MATSUSHITA
Q554	2SA564A(Q,R)	SILICON	MATSUSHITA
Q555	2SC1685(Q,R)	SILICON	MATSUSHITA
Q556	2SD1913(R,S)	SILICON	SANYO
Q557	2SB1133(R,S)	SILICON	SANYO
Q558	2SA564A(Q,R)	SILICON	MATSUSHITA
Q561	2SD1302(S,T)	SILICON	MATSUSHITA
Q562	2SD1302(S,T)	SILICON	MATSUSHITA
Q563	2SA564A(Q,R)	SILICON	MATSUSHITA
Q565	2SD1302(S,T)	SILICON	MATSUSHITA
Q566	2SD1302(S,T)	SILICON	MATSUSHITA
Q567	2SA564A(Q,R)	SILICON	MATSUSHITA
Q601	2SD1302(S,T)	SILICON	MATSUSHITA
Q602	2SD1302(S,T)	SILICON	MATSUSHITA
Q603	2SA564A(Q,R)	SILICON	MATSUSHITA
Q605	2SD1302(S,T)	SILICON	MATSUSHITA
Q606	2SD1302(S,T)	SILICON	MATSUSHITA
Q607	2SC1685(Q,R)	SILICON	MATSUSHITA
Q608	2SC1685(Q,R)	SILICON	MATSUSHITA
Q609	DTC144ES	SILICON	ROHM
Q610	DTC144ES	SILICON	ROHM
Q631	2SC1741A(Q,R)	SILICON	ROHM
Q633	2SC1741A(Q,R)	SILICON	ROHM
Q635	2SC1685(Q,R)	SILICON	MATSUSHITA
Q636	2SC1685(Q,R)	SILICON	MATSUSHITA
Q637	DTC144EN	SILICON	ROHM
Q638	DTC144EN	SILICON	ROHM
Q641	2SC1685(Q,R)	SILICON	MATSUSHITA
Q642	DTC144ES	SILICON	ROHM
Q643	DTA144ES	SILICON	ROHM
Q644	2SB544MP(E,F)	SILICON	SANYO
Q645	DTC144ES	SILICON	ROHM
Q646	2SB544MP(E,F)	SILICON	SANYO
Q647	DTC144ES	SILICON	ROHM
Q648	2SC3377(Q,R)	SILICON	ROHM
Q649	2SA564A(Q,R)	SILICON	MATSUSHITA
Q650	DTC144ES	SILICON	ROHM

## I. C. S

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
IC501	STK4161MK5V	I.C.	SANYO
IC502	TA7317P	I.C.	TOSHIBA
IC561	M5218L-R	I.C.	MITSUBISHI
IC562	TC9164N	I.C.	TOSHIBA
IC563	M5218L	I.C.	MITSUBISHI
IC631	UPC1290C	I.C.	NEC
IC651	HD614022SH87	I.C.	HITACHI

## DIODES

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
D501	MA165	ZENER	MATSUSHITA
D502	MA165	ZENER	MATSUSHITA
D503	MA165	ZENER	MATSUSHITA
D504	MA165	ZENER	MATSUSHITA
D505	RD9.1JSB3	ZENER	NEC
D551	ERA15-02L19	SILICON	FUJI
D552	ERA15-02L19	SILICON	FUJI
D553	ERA15-02L19	SILICON	FUJI
D554	ERA15-02L19	SILICON	FUJI
D555	ERB12-02RKL1	SILICON	FUJI
D556	ERB12-02RKL1	SILICON	FUJI
D557	ERB12-02RKL1	SILICON	FUJI
D558	ERB12-02RKL1	SILICON	FUJI
D559	MA165	ZENER	MATSUSHITA
D560	MA165	ZENER	MATSUSHITA
D561	RD5.6JSB3	ZENER	NEC
D564	RD11JSB3	ZENER	NEC
D565	RD12JSB3	ZENER	NEC
D566	MA165	ZENER	MATSUSHITA
D568	RD5.6JSB3	ZENER	NEC
D569	RD12JSB3	ZENER	NEC
D571	ERA15-02L19	SILICON	FUJI
D572	ERA15-02L19	SILICON	FUJI
D575	RD5.6JSB3	ZENER	NEC
D576	RD6.8JSB3	ZENER	NEC
D578	MA165	ZENER	MATSUSHITA
D579	MA165	ZENER	MATSUSHITA
D580	MA165	ZENER	MATSUSHITA
D581	MA165	ZENER	MATSUSHITA
D582	MA165	ZENER	MATSUSHITA
D583	ERA15-02L19	SILICON	FUJI
D584	ERA15-02L19	SILICON	FUJI
D585	ERA15-02L19	SILICON	FUJI
D586	ERA15-02L19	SILICON	FUJI
D587	MA165	ZENER	MATSUSHITA
D588	MA165	ZENER	MATSUSHITA
D589	MA165	ZENER	MATSUSHITA
D590	ERA15-02L19	SILICON	FUJI
D591	RD6.2JSB3	ZENER	NEC
D592	RD6.2JSB3	ZENER	NEC
D593	1SS133	SILICON	ROHM
D633	MA165	ZENER	MATSUSHITA

## CAPACITORS

ITEM	PART NUMBER	DESCRIPTION	AREA
C001	QCZ9019-472	4700PF	CERAMIC
C001	QCZ9019-472	4700PF	CERAMIC
C001	QCZ9019-472	4700PF	CERAMIC
C001	QCZ9019-472BS	4700PF	CERAMIC
C501	QETB1EM-106	10MF 25V	ELECTRO
C502	QETB1EM-106	10MF 25V	ELECTRO
C503	QCS21HJ-101	100PF 50V	CERAMIC
C504	QCS21HJ-101	100PF 50V	CERAMIC
C505	QCS21HJ-820	82PF 50V	CERAMIC
C506	QCS21HJ-820	82PF 50V	CERAMIC
C507	QEK61CM-107	100MF 16V	ELECTRO
C508	QEK61CM-107	100MF 16V	ELECTRO
C509	QCS21HJ-5R0	5PF 50V	CERAMIC
C510	QCS21HJ-5R0	5PF 50V	CERAMIC
C511	QETB1HM-226	22MF 50V	ELECTRO
C512	QETB1HM-226	22MF 50V	ELECTRO
C513	QETB1HM-476	47MF 50V	ELECTRO
C514	QETB1HM-226	22MF 50V	ELECTRO
C515	QFV81HJ-104	0.1MF 50V	T.FILM
C516	QFV81HJ-104	0.1MF 50V	T.FILM
C517	QFV81HJ-104	0.1MF 50V	T.FILM
C518	QFV81HJ-104	0.1MF 50V	T.FILM
C519	QETB1HM-225	2.2MF 50V	ELECTRO
C520	QETB1CM-226	22MF 16V	ELECTRO
C521	QETB1AM-476	47MF 10V	ELECTRO
C522	QCF21HP-103	0.01MF 50V	CERAMIC
C523	QETB2AM-476	47MF 100V	ELECTRO
C524	QCF21HP-473	0.047MF 50V	CERAMIC
C525	QEK61HM-224G	0.22MF 50V	ELECTRO
C526	QETB1HM-474	0.47MF 50V	ELECTRO
C529	QCF21HP-103	0.01MF 50V	CERAMIC
C537	QCY21HK-472	4700PF 50V	CERAMIC
C540	QCF21HP-103	0.01MF 50V	CERAMIC
C541	QETB1AM-476	47MF 10V	ELECTRO
C542	QETB1AM-476	47MF 10V	ELECTRO

△ : SAFETY PARTS



### CAPACITORS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	C551	QCF21HP-103	0.01MF	50V	CERAMIC	
	C552	QCF21HP-103	0.01MF	50V	CERAMIC	
	C553	QCF21HP-103	0.01MF	50V	CERAMIC	
	C554	QETB1VM-108	1000MF	35V	ELECTRO	
	C555	QETB1EM-338	3300MF	25V	ELECTRO	
	C556	QCE22HP-103	0.01MF	500V	CERAMIC	C DBS E F
	C556	QCE22HP-103	0.01MF	500V	CERAMIC	
	C556	QCE22HP-103	0.01MF	500V	CERAMIC	
	C556	QFH42EK-104	0.1MF	250V	M.MYLAR	
	C557	QCE22HP-103	0.01MF	500V	CERAMIC	
	C558	QCE22HP-103	0.01MF	500V	CERAMIC	
	C559	QE20061-478	4700MF	50V	ELECTRO	
	C560	QE20061-478	4700MF	50V	ELECTRO	
	C564	QETB1CM-226	22MF	16V	ELECTRO	
	C565	QCF21HP-223	0.022MF	50V	CERAMIC	
	C566	QETB1CM-476	47MF	16V	ELECTRO	
	C567	QETB1EM-106	10MF	25V	ELECTRO	
	C568	QCF21HP-103	0.01MF	50V	CERAMIC	
	C569	QETB1CM-226	22MF	16V	ELECTRO	
	C570	QETB1AM-476	47MF	10V	ELECTRO	
	C571	QCF21HP-103	0.01MF	50V	CERAMIC	
	C572	QETB1AM-476	47MF	10V	ELECTRO	
	C573	QETB1CM-226	22MF	16V	ELECTRO	
	C574	QCF21HP-103	0.01MF	50V	CERAMIC	
	C575	QETB1CM-226	22MF	16V	ELECTRO	
	C579	QETB1EM-338	3300MF	25V	ELECTRO	
	C581	QETB1HM-225	2.2MF	50V	ELECTRO	
	C582	QETB1HM-225	2.2MF	50V	ELECTRO	
	C583	QCS21HJ-101	100PF	50V	CERAMIC	
	C584	QCS21HJ-101	100PF	50V	CERAMIC	
	C585	QCS21HJ-101	100PF	50V	CERAMIC	
	C586	QCS21HJ-101	100PF	50V	CERAMIC	
	C587	QCY21HK-682	6800PF	50V	CERAMIC	
	C588	QCY21HK-682	6800PF	50V	CERAMIC	
	C589	QCY21HK-182	1800PF	50V	CERAMIC	
	C590	QCY21HK-182	1800PF	50V	CERAMIC	
	C591	QETB1EM-226	22MF	25V	ELECTRO	
	C592	QETB1EM-226	22MF	25V	ELECTRO	
	C593	QETB1HM-225	2.2MF	50V	ELECTRO	
	C594	QETB1HM-225	2.2MF	50V	ELECTRO	
	C595	QETB1HM-475	4.7MF	50V	ELECTRO	
	C596	QETB1HM-475	4.7MF	50V	ELECTRO	
	C597	QETB1HM-475	4.7MF	50V	ELECTRO	
	C598	QETB1HM-475	4.7MF	50V	ELECTRO	
	C601	QCY21HK-122	1200PF	50V	CERAMIC	
	C602	QCY21HK-122	1200PF	50V	CERAMIC	
	C603	QETB1HM-105	1MF	50V	ELECTRO	
	C604	QCF21HP-223	0.022MF	50V	CERAMIC	
	C605	QCS21HJ-101	100PF	50V	CERAMIC	
	C606	QCS21HJ-101	100PF	50V	CERAMIC	
	C610	QETB1EM-106	10MF	25V	ELECTRO	
	C631	QETB1HM-105	1MF	50V	ELECTRO	
	C632	QETB1HM-105	1MF	50V	ELECTRO	
	C633	QETB1EM-106	10MF	25V	ELECTRO	
	C634	QCS21HJ-471	470PF	50V	CERAMIC	
	C635	QCS21HJ-101	100PF	50V	CERAMIC	
	C636	QCS21HJ-101	100PF	50V	CERAMIC	
	C637	QCS21HJ-101	100PF	50V	CERAMIC	
	C638	QCS21HJ-101	100PF	50V	CERAMIC	
	C639	QCY21HK-102	1000PF	50V	CERAMIC	
	C640	QCY21HK-102	1000PF	50V	CERAMIC	
	C641	QCS21HJ-560	56PF	50V	CERAMIC	
	C642	QCS21HJ-560	56PF	50V	CERAMIC	
	C643	QCS21HJ-681	680PF	50V	CERAMIC	
	C644	QCS21HJ-681	680PF	50V	CERAMIC	
	C646	QCF21HP-223	0.022MF	50V	CERAMIC	
	C647	QETB1EM-106	10MF	25V	ELECTRO	
	C650	QETB1HM-225	2.2MF	50V	ELECTRO	
	C651	QCS21HJ-221	220PF	50V	CERAMIC	F F F F F F F F
	C652	QCS21HJ-221	220PF	50V	CERAMIC	
	C653	QCS21HJ-221	220PF	50V	CERAMIC	
	C654	QCS21HJ-221	220PF	50V	CERAMIC	
	C655	QCS21HJ-221	220PF	50V	CERAMIC	
	C656	QCS21HJ-221	220PF	50V	CERAMIC	
	C657	QCY21HK-102	1000PF	50V	CERAMIC	
	C658	QCY21HK-102	1000PF	50V	CERAMIC	
	C659	QCS21HJ-471	470PF	50V	CERAMIC	F F
	C660	QCS21HJ-471	470PF	50V	CERAMIC	
	C661	QCF21HP-473	0.047MF	50V	CERAMIC	
	C661	QETB1EM-106	10MF	25V	ELECTRO	
	C662	QCY21HK-102	1000PF	50V	CERAMIC	
	C663	QCF21HP-103	0.01MF	50V	CERAMIC	
	C665	QCF21HP-473	0.047MF	50V	CERAMIC	
	C666	QCZ0205-155	1.5MF	25V	CERAMIC	
	C667	QETB1HM-474	0.47MF	50V	ELECTRO	
	C668	QETB1HM-225	2.2MF	50V	ELECTRO	

### RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R501	QRD167J-102	1K	1/6W	CARBON	
	R502	QRD167J-102	1K	1/6W	CARBON	
	R503	QRD167J-104	100K	1/6W	CARBON	
	R504	QRD167J-104	100K	1/6W	CARBON	
	R505	QRD167J-681	680	1/6W	CARBON	
	R506	QRD167J-681	680	1/6W	CARBON	
	R507	QRD167J-471	470	1/6W	CARBON	
	R508	QRD167J-471	470	1/6W	CARBON	
	R509	QRD167J-104	100K	1/6W	CARBON	
	R510	QRD167J-104	100K	1/6W	CARBON	
△	R511	QRD14CJ-272S	2.7K	1/4W	UNF. CARBON	
△	R512	QRD14CJ-272S	2.7K	1/4W	UNF. CARBON	
△	R513	QRD14CJ-272S	2.7K	1/4W	UNF. CARBON	
△	R514	QRD14CJ-272S	2.7K	1/4W	UNF. CARBON	
△	R515	QRX012J-R22AM	0.22	1W	M.FILM	
△	R516	QRX012J-R22AM	0.22	1W	M.FILM	
△	R517	QRZ0077-101	100	1/4W	FUSIBLE	
△	R518	QRZ0077-100	10	1/4W	FUSIBLE	
△	R519	QRD14CJ-100S	10	1/4W	UNF. CARBON	
△	R520	QRD14CJ-100S	10	1/4W	UNF. CARBON	
△	R521	QRD14CJ-100S	10	1/4W	UNF. CARBON	
△	R522	QRD14CJ-100S	10	1/4W	UNF. CARBON	
	R523	QRD167J-823	82K	1/6W	CARBON	
	R524	QRD167J-104	100K	1/6W	CARBON	
	R525	QRD167J-223	22K	1/6W	CARBON	
	R526	QRD167J-223	22K	1/6W	CARBON	
	R527	QRD167J-103	10K	1/6W	CARBON	
△	R528	QRG022J-561AM	560	2W	O.M.FILM	
	R529	QRD167J-104	100K	1/6W	CARBON	
	R530	QRD167J-104	100K	1/6W	CARBON	
	R531	QRD167J-473	47K	1/6W	CARBON	
	R532	QRD167J-563	56K	1/6W	CARBON	
	R533	QRD167J-223	22K	1/6W	CARBON	
	R534	QRD167J-274	270K	1/6W	CARBON	
	R535	QRD167J-223	22K	1/6W	CARBON	
△	R536	QRG022J-122AM	1.2K	2W	O.M.FILM	
△	R537	QRD125J-331	330	1/2W	UNF. CARBON	
△	R538	QRD125J-331	330	1/2W	UNF. CARBON	
△	R539	QRG022J-390AM	39	2W	O.M.FILM	
△	R540	QRG022J-390AM	39	2W	O.M.FILM	
△	R541	QRZ0077-100	10	1/4W	FUSIBLE	
	R542	QRD167J-152	1.5K	1/6W	CARBON	
	R543	QRD167J-473	47K	1/6W	CARBON	
	R544	QRD167J-105	1M	1/6W	CARBON	
	R545	QRD167J-102	1K	1/6W	CARBON	
	R546	QRD167J-332	3.3K	1/6W	CARBON	
	R551	QRD167J-103	10K	1/6W	CARBON	
	R552	QRD167J-103	10K	1/6W	CARBON	
	R554	QRD167J-332	3.3K	1/6W	CARBON	
	R555	QRD167J-103	10K	1/6W	CARBON	
	R556	QRD167J-332	3.3K	1/6W	CARBON	
	R557	QRD167J-332	3.3K	1/6W	CARBON	
	R558	QRD167J-472	4.7K	1/6W	CARBON	
	R559	QRD167J-105	1M	1/6W	CARBON	
	R560	QRD167J-224	220K	1/6W	CARBON	
	R561	QRD167J-272	2.7K	1/6W	CARBON	
	R562	QRD167J-272	2.7K	1/6W	CARBON	
	R563	QRD167J-104	100K	1/6W	CARBON	
	R564	QRD167J-104	100K	1/6W	CARBON	
	R565	QRD167J-104	100K	1/6W	CARBON	
	R566	QRD167J-104	100K	1/6W	CARBON	
	R567	QRD167J-223	22K	1/6W	CARBON	
	R568	QRD167J-223	22K	1/6W	CARBON	
	R569	QRD167J-623	62K	1/6W	CARBON	
	R570	QRD167J-623	62K	1/6W	CARBON	
	R571	QRD167J-333	33K	1/6W	CARBON	
	R572	QRD167J-333	33K	1/6W	CARBON	
	R573	QRD167J-243	24K	1/6W	CARBON	
	R574	QRD167J-243	24K	1/6W	CARBON	
	R575	QRD167J-223	22K	1/6W	CARBON	
	R576	QRD167J-223	22K	1/6W	CARBON	
	R577	QRD167J-623	62K	1/6W	CARBON	
	R578	QRD167J-623	62K	1/6W	CARBON	
	R579	QRD167J-472	4.7K	1/6W	CARBON	
	R580	QRD167J-472	4.7K	1/6W	CARBON	
	R581	QRD167J-474	470K	1/6W	CARBON	
	R582	QRD167J-474	470K	1/6W	CARBON	
	R583	QRD167J-393	39K	1/6W	CARBON	
	R584	QRD167J-393	39K	1/6W	CARBON	
	R585	QRD167J-102	1K	1/6W	CARBON	
	R586	QRD167J-102	1K	1/6W	CARBON	
	R587	QRD167J-104	100K	1/6W	CARBON	
	R588	QRD167J-104	100K	1/6W	CARBON	
	R589	QRD167J-221	220	1/6W	CARBON	
	R590	QRD167J-221	220	1/6W	CARBON	

△ : SAFETY PARTS

## RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R595	QRD167J-473	47K	1/6W	CARBON	
	R596	QRD167J-473	47K	1/6W	CARBON	
	R597	QRD167J-473	47K	1/6W	CARBON	
	R598	QRD167J-473	47K	1/6W	CARBON	
	R599	QRD167J-103	10K	1/6W	CARBON	
	R600	QRD167J-103	10K	1/6W	CARBON	
	R601	QRD167J-103	10K	1/6W	CARBON	
	R602	QRD167J-103	10K	1/6W	CARBON	
	R603	QRD167J-392	3.9K	1/6W	CARBON	
	R604	QRD167J-392	3.9K	1/6W	CARBON	
	R605	QRD167J-103	10K	1/6W	CARBON	
	R606	QRD167J-103	10K	1/6W	CARBON	
	R607	QRD167J-104	100K	1/6W	CARBON	
	R608	QRD167J-104	100K	1/6W	CARBON	
	R609	QRD167J-473	47K	1/6W	CARBON	
	R610	QRD167J-473	47K	1/6W	CARBON	
	R611	QRD167J-103	10K	1/6W	CARBON	
	R612	QRD167J-103	10K	1/6W	CARBON	
	R613	QRD167J-471	470	1/6W	CARBON	
	R614	QRD167J-471	470	1/6W	CARBON	
	R615	QRD167J-103	10K	1/6W	CARBON	
	R616	QRD167J-103	10K	1/6W	CARBON	
	R617	QVZ3518-473	47K	0.1W	VARIABLE	
	R618	QVZ3518-473	47K	0.1W	VARIABLE	
	R619	QRD167J-473	47K	1/6W	CARBON	
	R620	QRD167J-473	47K	1/6W	CARBON	
	R621	QRD167J-473	47K	1/6W	CARBON	
	R622	QRD167J-223	22K	1/6W	CARBON	
	R623	QRD167J-105	1M	1/6W	CARBON	
	R624	QRD167J-103	10K	1/6W	CARBON	
	R625	QRD167J-333	33K	1/6W	CARBON	
△	R626	QRD167J-105	1M	1/6W	CARBON	
	R629	QRZ0077-220	22	1/4W	FUSIBLE	
	R630	QRD167J-102	1K	1/6W	CARBON	
	R632	QRD167J-332	3.3K	1/6W	CARBON	
	R633	QRD167J-104	100K	1/6W	CARBON	
	R634	QRD167J-102	1K	1/6W	CARBON	
△	R635	QRD167J-331	330	1/6W	CARBON	
	R636	QRZ0077-100	10	1/4W	FUSIBLE	
	R639	QRD167J-473	47K	1/6W	CARBON	
	R640	QRD167J-473	47K	1/6W	CARBON	
	R641	QRD167J-100	10	1/6W	CARBON	
	R642	QRD167J-100	10	1/6W	CARBON	
	R643	QRD167J-222	2.2K	1/6W	CARBON	
	R644	QRD167J-103	10K	1/6W	CARBON	
	R645	QVZ3518-224	220K	0.1W	VARIABLE	
	R646	QVZ3518-224	220K	0.1W	VARIABLE	
	R647	QRD167J-473	47K	1/6W	CARBON	
	R648	QRD167J-473	47K	1/6W	CARBON	
	R649	QRD167J-223	22K	1/6W	CARBON	
	R651	QRD167J-273	27K	1/6W	CARBON	
	R653	QRD167J-104	100K	1/6W	CARBON	
	R654	QRD167J-104	100K	1/6W	CARBON	
	R655	QRD167J-102	1K	1/6W	CARBON	
	R656	QRD167J-223	22K	1/6W	CARBON	
	R657	QRD167J-473	47K	1/6W	CARBON	
	R658	QRD167J-223	22K	1/6W	CARBON	
	R659	QRD167J-103	10K	1/6W	CARBON	
	R660	QRD167J-102	1K	1/6W	CARBON	
	R661	QRD167J-103	10K	1/6W	CARBON	
	R662	QRD167J-102	1K	1/6W	CARBON	
	R663	QRD167J-102	1K	1/6W	CARBON	
	R664	QRD167J-152	1.5K	1/6W	CARBON	
	R665	QVZ3518-472	4.7K	0.1W	VARIABLE	
	R666	QRD167J-392	3.9K	1/6W	CARBON	
	R667	QVZ3518-472	4.7K	0.1W	VARIABLE	
	R668	QRD167J-224	220K	1/6W	CARBON	
	R669	QRD167J-394	390K	1/6W	CARBON	
	R670	QRD167J-223	22K	1/6W	CARBON	
	R671	QRD167J-223	22K	1/6W	CARBON	
	R672	QRD167J-105	1M	1/6W	CARBON	
	R695	QRD167J-104	100K	1/6W	CARBON	
	R696	QRD167J-104	100K	1/6W	CARBON	
	R697	QRD167J-102	1K	1/6W	CARBON	
	R698	QRD167J-102	1K	1/6W	CARBON	
	R731	QRD167J-104	100K	1/6W	CARBON	
	R732	QRD167J-104	100K	1/6W	CARBON	
	R735	QRD167J-104	100K	1/6W	CARBON	
	R736	QRD167J-104	100K	1/6W	CARBON	
	R737	QRD167J-113	11K	1/6W	CARBON	
	R738	QRD167J-113	11K	1/6W	CARBON	
	R739	QRD167J-103	10K	1/6W	CARBON	
	R740	QVDA96W-E15B	100K		VARIABLE	
	R741	QRD167J-102	1K	1/6W	CARBON	
	R742	QRD167J-102	1K	1/6W	CARBON	
	R743	QRD167J-222	2.2K	1/6W	CARBON	
	R744	QRD167J-102	1K	1/6W	CARBON	
	RA501	QRB065J-223	22K	1/8W	R.NETWORK	

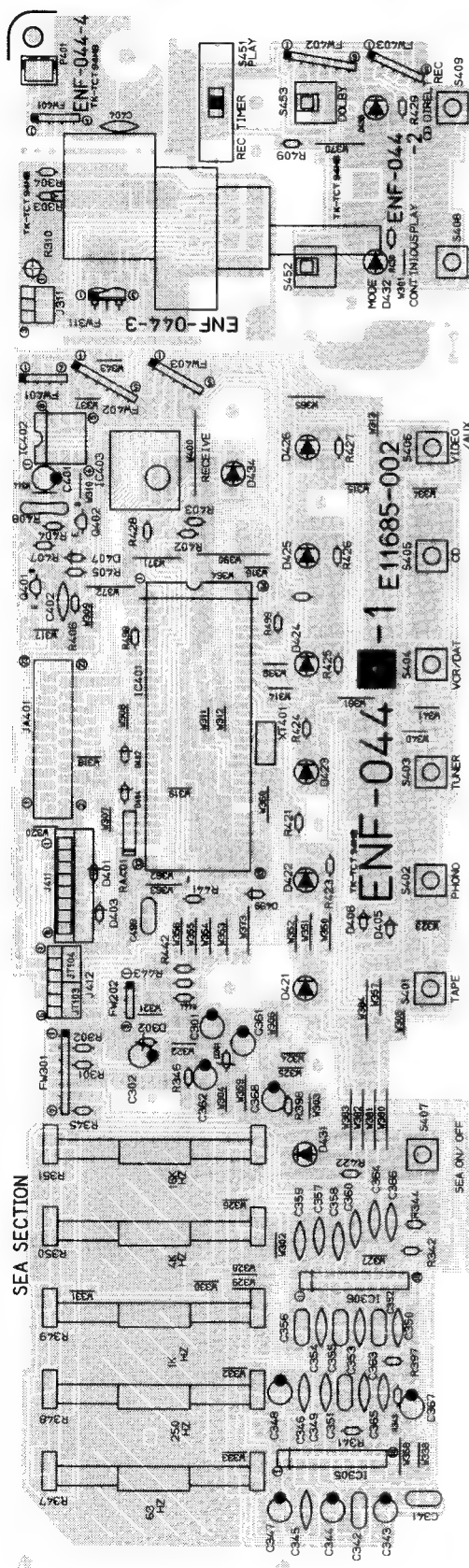
△ : SAFETY PARTS

## OTHERS

△	ITEM	PART NUMBER	DESCRIPTION		AREA
		EMG7331-002UZ	FUSE CLIP		
		EMG7331-002UZ	FUSE CLIP		
		EMG7331-002UZ	FUSE CLIP		C
		EMG7331-002Z	FUSE CLIP		
		EMG7331-002Z	FUSE CLIP		
		EMG7331-002Z	FUSE CLIP		
		EMG7331-002Z	FUSE CLIP		
		E11684-003	CIRCUIT BOARD		C
		E11684-003	CIRCUIT BOARD		C
		E11684-003	CIRCUIT BOARD		E
		E11684-003BS	CIRCUIT BOARD		F
		E11684-003BS	CIRCUIT BOARD		DBS
		E65508-002	TAB		
		E67132-T2R0	FUSE LABEL		C
		E67764-202	WRAPPING TERMINAL		
		E67764-203	WRAPPING TERMINAL		
		E70945-H25	HEAT SINK		
		E70945-H35	HEAT SINK		
		E70945-H35	HEAT SINK		
		SBSB3010Z	SCREW		
		SBSB3010Z	SCREW		
		SBSB3010Z	SCREW		
	J301	EMV7112-007	CONNECTOR		
	J312	EMV7122-003Z	CONNECTOR		
	J313	EMV7122-005Z	CONNECTOR		
	J455	EMV7112-008	CONNECTOR		
	J457	EMV7112-004	CONNECTOR		
	J458	EMV7112-010	CONNECTOR		
	J501	EMB90YV-401A	SPEAKER TERMINAL		
	J502	QMS6312-023	HEADPHONE JACK		
	J503	EMN00TV-204A	2P PIN JACK		
	J504	QMA1221-009	DC JACK		
	J507	EMV7112-006	CONNECTOR		
	J561	EMN00TV-405A	4P PIN JACK		
	J562	EMN00TV-602A	6P PIN JACK		
	J603	EMV7112-004	CONNECTOR		
	L501	EQL0001-R45	INDUCTOR		
	L502	EQL0001-R45	INDUCTOR		
	L601	EQL2106-223	INDUCTOR		
	L602	EQL2106-223	INDUCTOR		
	L631	ENZ6003-008	OSC BLOCK		
	L633	EQL2106-223	INDUCTOR		
	L634	EQL2106-223	INDUCTOR		
	P550	E67764-006	WRAPPING TERMINAL		
	P631	E04363-008	PLUG ASSY		
	P632	QMV5005-003K	PLUG ASSY		
	P633	QMV5005-003K	PLUG ASSY		
△	S001	QSP1106-004	POWER SWITCH		C
△	S001	QSP1106-004	POWER SWITCH		E
△	S001	QSP1106-004	POWER SWITCH		F
△	S001	QSP1106-004BS	POWER SWITCH		DBS
	S501	QST4102-E07	PUSH SWITCH		
	S631	QSS6A12-E01	SLIDE SWITCH		
	EP501	E70859-001	EARTH PLATE		
	EP502	E70859-001	EARTH PLATE		
	FW201	EWR36B-30LST	FLAT WIRE		
	FW311	EWR33B-10LST	FLAT WIRE		
	FW313	EWR35B-25LST	FLAT WIRE		
	FW507	EWR36B-35KST	FLAT WIRE		
	JB401	EMV7123-023	CONNECTOR		
	JT401	EMV7122-003Z	CONNECTOR		
	JT402	EMV7122-003Z	CONNECTOR		
	RY501	ESK7D24-211	RELAY		
	XT601	ECX0004-194KM	RESONATOR		

△ : SAFETY PARTS

■ ENF-044 A System Micon & SEA PC Board Ass'y



TRANSISTORS

ITEM	PART NUMBER	DESCRIPTION		AREA
		MAKER		
Q401	2SC1685(R,S)	SILICON	MATSUSHITA	
Q402	DTA144ES	SILICON	ROHM	

I. C. S

ITEM	PART NUMBER	DESCRIPTION		AREA
		MAKER		
IC305	BA3812L	I.C.	ROHM	
IC306	BA3812L	I.C.	ROHM	
IC401	UPD75104CW-129	I.C.	NEC	
IC402	LB1639-CV	I.C.	SANYO	
IC403	A1QH3021H0	I.C.	SHARP	

DIODES

ITEM	PART NUMBER	DESCRIPTION		AREA
		MAKER		
D301	RD6.8JSB3	ZENER	NEC	
D302	RD6.8JSB3	ZENER	NEC	
D401	MA165	ZENER	MATSUSHITA	
D402	MA165	ZENER	MATSUSHITA	
D403	MA165	ZENER	MATSUSHITA	
D404	MA165	ZENER	MATSUSHITA	
D405	MA165	ZENER	MATSUSHITA	
D406	MA165	ZENER	MATSUSHITA	
D407	MA165	ZENER	MATSUSHITA	
D421	SLR-34DC50F124	L.E.D.	ROHM	
D422	SLR-34DC50F124	L.E.D.	ROHM	
D423	SLR-34DC50F124	L.E.D.	ROHM	
D424	SLR-34DC50F124	L.E.D.	ROHM	
D425	SLR-34DC50F124	L.E.D.	ROHM	
D426	SLR-34DC50F124	L.E.D.	ROHM	
D431	SLR-34VC50F124	L.E.D.	ROHM	
D432	SLR-34MC50F124	L.E.D.	ROHM	
D433	SLR-34VC50F124	L.E.D.	ROHM	
D434	SLR-34VC50F124	L.E.D.	ROHM	
D499	MA165	ZENER	MATSUSHITA	

CAPACITORS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	C301	QEK61CM-107	100MF	16V	ELECTRO	
	C302	QEK61CM-107	100MF	16V	ELECTRO	
	C341	QFN81HJ-273	0.027MF	50V	MYLAR	
	C342	QFN81HJ-273	0.027MF	50V	MYLAR	
	C343	QEK61HM-225G	2.2MF	50V	ELECTRO	
	C344	QEK61HM-225G	2.2MF	50V	ELECTRO	
	C345	QCY21HK-822	8200PF	50V	CERAMIC	
	C346	QCY21HK-822	8200PF	50V	CERAMIC	
	C347	QERS1HM-474G	0.47MF	50V	ELECTRO	
	C348	QERS1HM-474G	0.47MF	50V	ELECTRO	
	C349	QCY21HK-222	2200PF	50V	CERAMIC	
	C350	QCY21HK-222	2200PF	50V	CERAMIC	
	C351	QFV81HJ-124	0.12MF	50V	T.FILM	
	C352	QFV81HJ-124	0.12MF	50V	T.FILM	
	C353	QCS21HJ-471	470PF	50V	CERAMIC	
	C354	QCS21HJ-471	470PF	50V	CERAMIC	
	C355	QFN81HJ-333	0.033MF	50V	MYLAR	
	C356	QFN81HJ-333	0.033MF	50V	MYLAR	
	C357	QCS21HJ-121	120PF	50V	CERAMIC	
	C358	QCS21HJ-121	120PF	50V	CERAMIC	
	C359	QCY21HK-822	8200PF	50V	CERAMIC	
	C360	QCY21HK-822	8200PF	50V	CERAMIC	
	C361	QEK61HM-225G	2.2MF	50V	ELECTRO	
	C362	QEK61HM-225G	2.2MF	50V	ELECTRO	
	C363	QCS21HJ-331	330PF	50V	CERAMIC	
	C364	QCS21HJ-331	330PF	50V	CERAMIC	
	C365	QCS21HJ-101	100PF	50V	CERAMIC	
	C366	QCS21HJ-101	100PF	50V	CERAMIC	
	C367	QEK61EM-106	10MF	25V	ELECTRO	
	C368	QEK61EM-106	10MF	25V	ELECTRO	
	C401	QEK61CM-107	100MF	16V	ELECTRO	
	C402	QCF21HP-103	0.01MF	50V	CERAMIC	
	C404	QCF21HP-473	0.047MF	50V	CERAMIC	
	C499	QCZ0205-155	1.5MF	25V	CERAMIC	

△ : SAFETY PARTS

## RESISTORS

ITEM	PART NUMBER	DESCRIPTION			AREA
R301	QRD167J-221	220	1/6W	CARBON	
R302	QRD167J-221	220	1/6W	CARBON	
R303	QRD167J-103	10K	1/6W	CARBON	
R304	QRD167J-103	10K	1/6W	CARBON	
R310	QVDB91B-E15C	100K		VARIABLE	
R341	QRD167J-392	3.9K	1/6W	CARBON	
R342	QRD167J-392	3.9K	1/6W	CARBON	
R343	QRD167J-392	3.9K	1/6W	CARBON	
R344	QRD167J-392	3.9K	1/6W	CARBON	
R345	QRD167J-102	1K	1/6W	CARBON	
R346	QRD167J-102	1K	1/6W	CARBON	
R347	QVUB06W-E15B	100K		VARIABLE	
R348	QVUB06W-E15B	100K		VARIABLE	
R349	QVUB06W-E15B	100K		VARIABLE	
R350	QVUB06W-E15B	100K		VARIABLE	
R351	QVUB06W-E15B	100K		VARIABLE	
R397	QRD167J-104	100K	1/6W	CARBON	
R398	QRD167J-104	100K	1/6W	CARBON	
R402	QRD167J-223	22K	1/6W	CARBON	
R403	QRD167J-223	22K	1/6W	CARBON	
R404	QRD167J-473	47K	1/6W	CARBON	
R405	QRD167J-473	47K	1/6W	CARBON	
R406	QRD167J-223	22K	1/6W	CARBON	
R407	QRD167J-221	220	1/6W	CARBON	
△ R408	QRZ0077-100	10	1/4W	FUSIBLE	
R409	QRD167J-222	2.2K	1/6W	CARBON	
R421	QRD167J-271	270	1/6W	CARBON	
R422	QRD167J-271	270	1/6W	CARBON	
R423	QRD167J-271	270	1/6W	CARBON	
R424	QRD167J-271	270	1/6W	CARBON	
R425	QRD167J-271	270	1/6W	CARBON	
R426	QRD167J-271	270	1/6W	CARBON	
R427	QRD167J-271	270	1/6W	CARBON	
R428	QRD167J-271	270	1/6W	CARBON	
R429	QRD167J-271	270	1/6W	CARBON	
R430	QRD167J-271	270	1/6W	CARBON	
R441	QRD167J-271	270	1/6W	CARBON	
R442	QRD167J-271	270	1/6W	CARBON	
R443	QRD167J-271	270	1/6W	CARBON	
R444	QRD167J-271	270	1/6W	CARBON	
R498	QRD167J-102	1K	1/6W	CARBON	
R499	QRD167J-561	560	1/6W	CARBON	
RA401	QRB049J-474	470K	1/10W	NETWORK	

△ : SAFETY PARTS

## OTHERS

ITEM	PART NUMBER	DESCRIPTION	AREA
	E11685-002	CIRCUIT BOARD	
J311	EMV7122-003Z	CONNECTOR	
J411	EMV7112-008	CONNECTOR	
P401	EMV5103-002A	PLUG ASSY	
S401	ESP0001-018	TACT SWITCH	
S402	ESP0001-018	TACT SWITCH	
S403	ESP0001-018	TACT SWITCH	
S404	ESP0001-018	TACT SWITCH	
S405	ESP0001-018	TACT SWITCH	
S406	ESP0001-018	TACT SWITCH	
S407	ESP0001-018	TACT SWITCH	
S408	ESP0001-018	TACT SWITCH	
S409	ESP0001-018	TACT SWITCH	
S451	QSS6B23-E01	SLIDE SWITCH	
S452	QSP2256-001	PUSH SWITCH	
S453	QSP2256-001	PUSH SWITCH	
FW301	EWR37B-30KST	FLAT WIRE	
FW312	EWR23C-35JN	FLAT WIRE	
FW401	EWR34B-13SST	FLAT WIRE	
FW402	EWR36B-25SST	FLAT WIRE	
FW403	EWR35B-25SST	FLAT WIRE	
FW404	EWR33B-25LST	FLAT WIRE	
JA401	EMV7123-023R	CONNECTOR	
JT103	EMV7122-003Z	CONNECTOR	
JT104	EMV7122-003Z	CONNECTOR	
XT401	ECX0004-194KM	RESONATOR	

△ : SAFETY PARTS

■ ENC-054 A Cassette Switch PC Board Ass'y



DIODES

ITEM	PART NUMBER	DESCRIPTION		AREA
			MAKER	
D352	SLH-34DC3F	L.E.D.	ROHM	
D353	SLH-34DC3F	L.E.D.	ROHM	
D354	SLH-34DC3F	L.E.D.	ROHM	
D355	SLH-34DC3F	L.E.D.	ROHM	
D356	SLH-34VC3F	L.E.D.	ROHM	

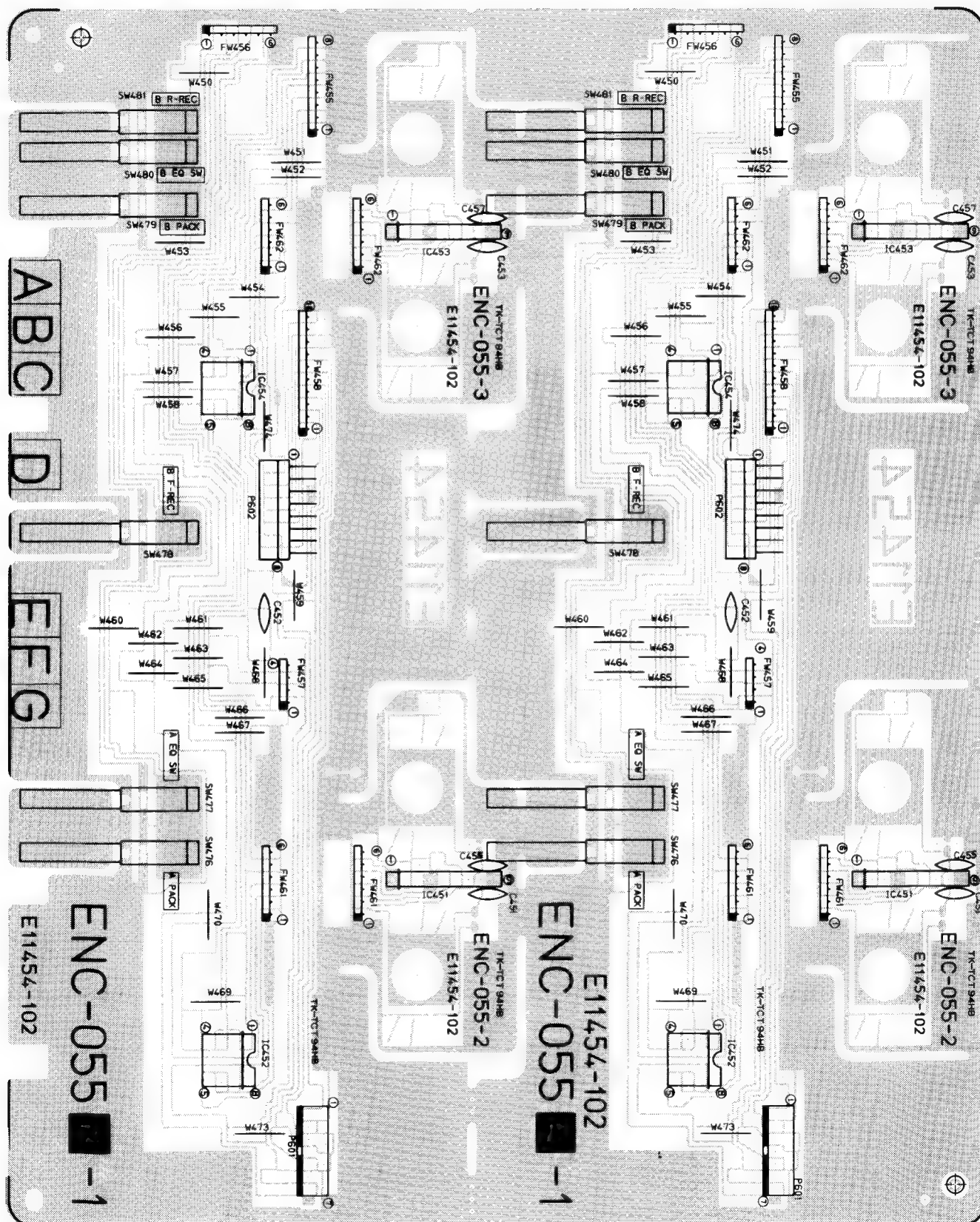
OTHERS

ITEM	PART NUMBER	DESCRIPTION	AREA
	E11686-002	CIRCUIT BOARD	
S351	ESP0001-018	TACT SWITCH	
S353	ESP0001-018	TACT SWITCH	
S354	ESP0001-018	TACT SWITCH	
S355	ESP0001-018	TACT SWITCH	
S356	ESP0001-018	TACT SWITCH	
S357	ESP0001-018	TACT SWITCH	
S358	ESP0001-018	TACT SWITCH	
S359	ESP0001-018	TACT SWITCH	
S360	ESP0001-018	TACT SWITCH	
S361	ESP0001-018	TACT SWITCH	
S362	ESP0001-018	TACT SWITCH	
S363	ESP0001-018	TACT SWITCH	
S364	ESP0001-018	TACT SWITCH	
FW411	EWR38B-40KST	FLAT WIRE	
FW412	EWR36B-40LST	FLAT WIRE	

△ : SAFETY PARTS



■ ENC-055 **A** Cassette Motor Drive PC Board Ass'y



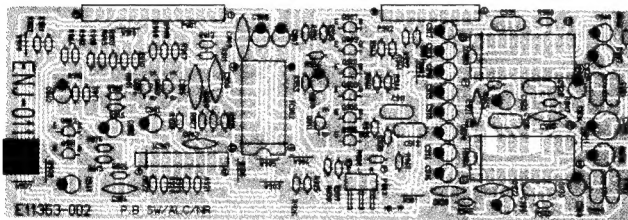
### I. C. S

△	ITEM	PART NUMBER	DESCRIPTION		AREA
			MAKER		
	IC451	BA6208	I.C.	ROHM	
	IC452	LB1639-CV	I.C.	SANYO	
	IC453	BA6208	I.C.	ROHM	
	IC454	LB1639-CV	I.C.	SANYO	

### CAPACITORS

△	ITEM	PART NUMBER	DESCRIPTION		AREA
	C451	QCF21HP-223	0.022MF	50V CERAMIC	
	C452	QCF21HP-223	0.022MF	50V CERAMIC	
	C453	QCF21HP-223	0.022MF	50V CERAMIC	
	C455	QCF21HP-223	0.022MF	50V CERAMIC	
	C457	QCF21HP-223	0.022MF	50V CERAMIC	

### ■ ENJ-011 A ALC & NR PC Board Ass'y



### TRANSISTORS

△	ITEM	PART NUMBER	DESCRIPTION		AREA
			MAKER		
	Q901	2SD655(E,F)	SILICON	HITACHI	
	Q902	2SD655(E,F)	SILICON	HITACHI	
	Q903	2SD655(E,F)	SILICON	HITACHI	
	Q904	2SD655(E,F)	SILICON	HITACHI	
	Q905	2SC1740(R,S)	SILICON	ROHM	
	Q906	2SC1740(R,S)	SILICON	ROHM	
	Q907	2SC1740(R,S)	SILICON	ROHM	
	Q908	2SC1740(R,S)	SILICON	ROHM	
	Q909	2SC1740(R,S)	SILICON	ROHM	
	Q910	2SC1740(R,S)	SILICON	ROHM	
	Q911	2SC1740(R,S)	SILICON	ROHM	

### I. C. S

△	ITEM	PART NUMBER	DESCRIPTION		AREA
			MAKER		
	IC901	M5218L	I.C.	MITSUBISHI	
	IC902	TC4053BP	I.C.	TOSHIBA	
	IC903	AN7363N	I.C.	MATSUSHITA	
	IC904	AN7363N	I.C.	MATSUSHITA	

### CAPACITORS

△	ITEM	PART NUMBER	DESCRIPTION		AREA
	C901	QEK61HM-105G	1MF	50V ELECTRO	
	C902	QEK61HM-105G	1MF	50V ELECTRO	
	C903	QCS21HJ-220	22PF	50V CERAMIC	
	C904	QCS21HJ-220	22PF	50V CERAMIC	
	C905	QCF21HP-223	0.022MF	50V CERAMIC	
	C906	QCF21HP-223	0.022MF	50V CERAMIC	
	C907	QEK61EM-475G	4.7MF	25V ELECTRO	
	C908	QEK61EM-475G	4.7MF	25V ELECTRO	
	C909	QCF21HP-223	0.022MF	50V CERAMIC	
	C910	QEK61EM-106	10MF	25V ELECTRO	

△ : SAFETY PARTS

### OTHERS

△	ITEM	PART NUMBER	DESCRIPTION		AREA
			MAKER		
		E11454-102	CIRCUIT BOARD		
	P601	QMV5005-007K	PLUG ASSY		
	P602	QMV5004-008K	PLUG ASSY		
	FW455	EWR38B-25KST	FLAT WIRE		
	FW456	EWR36B-20LST	FLAT WIRE		
	FW457	EWR34B-25KST	FLAT WIRE		
	FW458	EWR3AB-20KST	FLAT WIRE		
	FW461	EWR36B-08SST	FLAT WIRE		
	FW462	EWR36B-08SST	FLAT WIRE		
	SW476	ESB1100-003	LEAF SWITCH		
	SW477	ESB1100-003	LEAF SWITCH		
	SW478	ESB1100-003	LEAF SWITCH		
	SW479	ESB1100-003	LEAF SWITCH		
	SW480	ESB1100-003	LEAF SWITCH		
	SW481	ESB1100-003	LEAF SWITCH		

### CAPACITORS

△	ITEM	PART NUMBER	DESCRIPTION		AREA
	C911	QCF21HP-473	0.047MF	50V CERAMIC	
	C912	QCF21HP-473	0.047MF	50V CERAMIC	
	C913	QEK61HM-105G	1MF	50V ELECTRO	
	C914	QEK61HM-105G	1MF	50V ELECTRO	
	C915	QEK61HM-105G	1MF	50V ELECTRO	
	C916	QEK61HM-105G	1MF	50V ELECTRO	
	C917	QEK61EM-475G	4.7MF	25V ELECTRO	
	C918	QEK61EM-475G	4.7MF	25V ELECTRO	
	C919	QEK61EM-475G	4.7MF	25V ELECTRO	
	C920	QEK61EM-475G	4.7MF	25V ELECTRO	
	C921	QCF21HP-103	0.01MF	50V CERAMIC	
	C922	QCF21HP-103	0.01MF	50V CERAMIC	
	C923	QEK61HM-105G	1MF	50V ELECTRO	
	C924	QEK61HM-105G	1MF	50V ELECTRO	
	C925	QCY21HK-122	1200PF	50V CERAMIC	
	C926	QCY21HK-122	1200PF	50V CERAMIC	
	C927	QFV81HJ-683	0.068MF	50V T.FILM	
	C928	QFV81HJ-683	0.068MF	50V T.FILM	
	C929	QFN81HJ-272	2700PF	50V MYLAR	
	C930	QFN81HJ-272	2700PF	50V MYLAR	
	C931	QFV81HJ-104	0.1MF	50V T.FILM	
	C932	QFV81HJ-104	0.1MF	50V T.FILM	
	C933	QEK61EM-475G	4.7MF	25V ELECTRO	
	C934	QEK61EM-475G	4.7MF	25V ELECTRO	
	C935	QFN81HJ-182	1800PF	50V MYLAR	
	C936	QFN81HJ-182	1800PF	50V MYLAR	
	C937	QETB1AM-107	100MF	10V ELECTRO	
	C938	QETB1AM-107	100MF	10V ELECTRO	
	C939	QETB1CM-107	100MF	16V ELECTRO	
	C940	QEK61EM-106	10MF	25V ELECTRO	
	C941	QEK61EM-475G	4.7MF	25V ELECTRO	
	C942	QEK61EM-475G	4.7MF	25V ELECTRO	

### RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION		AREA
	R901	QRD167J-562	5.6K	1/6W CARBON	
	R902	QRD167J-562	5.6K	1/6W CARBON	
	R903	QRD167J-103	10K	1/6W CARBON	
	R904	QRD167J-103	10K	1/6W CARBON	
	R905	QRD167J-223	22K	1/6W CARBON	
	R906	QRD167J-223	22K	1/6W CARBON	
	R907	QRD167J-562	5.6K	1/6W CARBON	
	R908	QRD167J-562	5.6K	1/6W CARBON	
	R909	QRD167J-103	10K	1/6W CARBON	
	R910	QRD167J-103	10K	1/6W CARBON	
	R911	QRD167J-223	22K	1/6W CARBON	
	R912	QRD167J-223	22K	1/6W CARBON	
	R913	QRD167J-223	22K	1/6W CARBON	
	R914	QRD167J-223	22K	1/6W CARBON	
	R915	QRD167J-223	22K	1/6W CARBON	
	R916	QRD167J-223	22K	1/6W CARBON	
	R917	QRD167J-102	1K	1/6W CARBON	
	R918	QRD167J-102	1K	1/6W CARBON	
	R919	QRD167J-104	100K	1/6W CARBON	
	R920	QRD167J-104	100K	1/6W CARBON	

## RESISTORS

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	R921	QRD167J-472	4.7K	1/6W	CARBON	
	R922	QRD167J-472	4.7K	1/6W	CARBON	
	R923	QRD167J-104	100K	1/6W	CARBON	
	R924	QRD167J-104	100K	1/6W	CARBON	
	R925	QRD167J-104	100K	1/6W	CARBON	
	R926	QRD167J-104	100K	1/6W	CARBON	
	R927	QRD167J-104	100K	1/6W	CARBON	
	R928	QRD167J-104	100K	1/6W	CARBON	
	R929	QRD167J-104	100K	1/6W	CARBON	
	R930	QRD167J-473	47K	1/6W	CARBON	
	R931	QRD167J-223	22K	1/6W	CARBON	
	R932	QRD167J-223	22K	1/6W	CARBON	
	R933	QRD167J-272	2.7K	1/6W	CARBON	
	R934	QRD167J-272	2.7K	1/6W	CARBON	
	R935	QRD167J-153	15K	1/6W	CARBON	
	R936	QRD167J-153	15K	1/6W	CARBON	
	R937	QRD167J-104	100K	1/6W	CARBON	
	R938	QRD167J-104	100K	1/6W	CARBON	
	R939	QRD167J-332	3.3K	1/6W	CARBON	
	R940	QRD167J-332	3.3K	1/6W	CARBON	
	R941	QRD167J-223	22K	1/6W	CARBON	
	R942	QRD167J-223	22K	1/6W	CARBON	
	R943	QRD167J-561	560	1/6W	CARBON	
	R944	QRD167J-561	560	1/6W	CARBON	
	R945	QRD167J-102	1K	1/6W	CARBON	
	R946	QRD167J-102	1K	1/6W	CARBON	
	R947	QRD167J-680	68	1/6W	CARBON	
	R948	QRD167J-680	68	1/6W	CARBON	
	R949	QRD167J-103	10K	1/6W	CARBON	
	R950	QRD167J-472	4.7K	1/6W	CARBON	
	R951	QRD167J-102	1K	1/6W	CARBON	
	R952	QRD167J-102	1K	1/6W	CARBON	
	R953	QRD167J-105	1M	1/6W	CARBON	

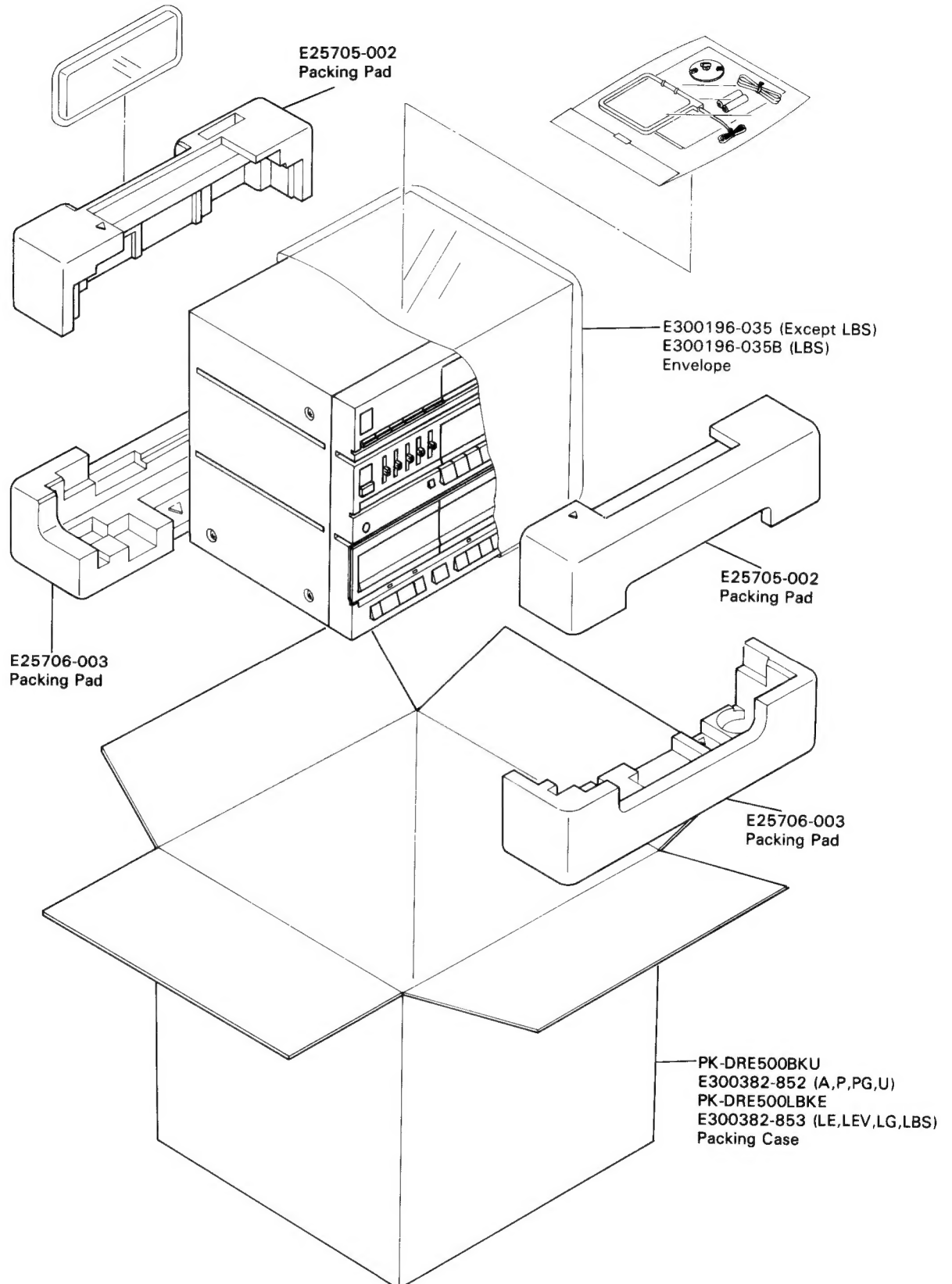
## OTHERS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
		E11363-002	CIRCUIT BOARD	A
	P901	EMV5101-013B	PLUG ASSY	
	P902	EMV5101-009B	PLUG ASSY	
	P903	EMV5101-003B	PLUG ASSY	

△ : SAFETY PARTS



## Packing Materials and Parts Numbers



### The Marks for Designated Areas

A.....Australia	LBS.....U.K. (with LW)
P,PG.....U.S. Military Market	LEV.....Switzer Land (with LW)
LE,LEF.....Continental Europe (with LW)	U.....Other Countries
LG.....West Germany (with LW)	No mark indicates all areas.

## Accessories List

△	Parts Number	Parts Name	Q'ty	Description	Areas
	E30580-1470A E30580-1470ABS BT20029C BT90098B BT20048B	Instruction Book Instruction Book Warranty Card Warranty Card Warranty Card	1 1 1 1 1	for Australia for New Zealand	Except LBS LBS A A P, PG
	BT20060 BT20064A BT20046C BT20066 QZL1008-001	Warranty Card Warranty Card Service Information EEC Agency FTZ Information Sheet	1 1 1 1 1		LBS LG P, PG LG, LBS LG
	TCP-3304 EQB4001-012 EWP502-001 E304084-001 E67007-001	Audio Tape Panflet AM Loop Antena Built in Antena Loop Stand Wire Antena Ass'y	1 1 1 1 1		Except LG LG
△	EMZ2001-007 E04056 UM-3(DJ) E35497-017 E35497-019	Adapter Siemens Plug Batterhy Caution Sheet Caution Sheet	1 1 2 1 1	110V 220V	LEV U, PG P PG, U
	QPGA025-03503 QPGA025-03503B E43486-340A RM-SE500	Envelope Envelope Safety Sheet Remote Control	1 1 1 1		Except LBS LBS LBS

△ : Safety Parts

The Marks for Designated Areas			
A.....	Australia	LBS.....	U.K. (with LW)
P,PG.....	U.S. Military Market	LEV.....	Switzer Land (with LW)
LE,LEF.....	Continental Europe (with LW)	U.....	Other Countries
LG.....	West Germany (with LW)	No mark indicates all areas.	